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EXTREMELY LOW FREQUENCY VERTICAL, 45-Hz ELECTRIC FIELD EXPOSURE OF RATS: A SEARCH FOR GROWTH, FOOD, AND WATER CONSUMPTION, BLOOD METABOLITE, HEMATOLOGICAL, AND PATHOLOGICAL CHANGES

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Research was conducted according to the principles enunciated in the "Guide for the Care and Use of Laboratory Animals," prepared by the Institute of Laboratory Animal Resources, National Research Council.

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Three hundred eighty-four young male rats were exposed to 45-Hz, vertical electric fields in nonmetallic cages, in an attempt to detect alteration of growth, food and water consumption, alterations in selected hematological and serum biochemical values, and pathological changes. Three experiments were performed, each using six groups of 16 animals exposed to field strengths of 0, 2, 10, 20, 50, and 100 V/m (RMS). All variables were statistically analyzed for differences and the possible existence of a "dose effect relationship". A further experiment (C)

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20. ABSTRACT (continued)

used 48 control animals and 48 animals exposed to 20 V/m (RMS) to minimize the possibility of missing a true alteration. Although some differences were found in three experiments (E, F, and H) neither a dose effect relationship nor a biological effect due to exposure was observed. In experiment G, no statistical differences ($p < 0.05$) were observed for any variables. It was concluded that no alterations in growth, food consumption, or water consumption resulted from exposure to extremely low frequency (ELF) electric fields. Neither serum or plasma concentrations of total protein, globulin, glucose, cholesterol, triglycerides and total lipid nor hematological values for red blood cells, white blood cells, segmented neutrophils, lymphocytes, monocytes, eosinophils, hematocrit or hemoglobin appear to be influenced by ELF fields. In addition, necropsy and histopathological examination of tissue from 16 organ systems did not reveal any changes that could be attributed to electric fields. Project was sponsored by the U. S. Naval Medical Research and Development Command, contract number XSBØ9.

PREFACE

The authors gratefully acknowledge the valuable assistance of S. A. Oliva for designing and maintaining the electronic systems of the exposure facility, C. A. McIntire III and W. E. Jackson III for performing the computer programming and statistical analyses, J. E. Egan for the hematological analyses, and G. D. Lee for preparation of the tissue specimens. We further acknowledge the invaluable efforts of A. L. Miller, A. E. Cummings, and P. W. Jones for the care and timely manner in which these experiments were performed. This project was sponsored by the U. S. Naval Medical Research and Development Command, contract number XSBØ9.

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INTRODUCTION

Extremely low frequency (ELF) radiation generally denotes electromagnetic radiation having frequencies from a few hertz (sometimes including zero hertz or dc) to several hundred hertz. The natural or ambient levels of ELF radiation have been reviewed by Polk;[14] however, the extent to which these fields may interact with biological systems is still the subject of considerable research. The largest source of man-made ELF radiation comes from commercial electrical power lines operating at 50 or 60 Hz. With the recent development of the Navy's ELF Communications System for operation at 45 or 75 Hz, yet another man-made source of this radiation will come into existence.

It has become apparent that at least certain biological systems can sense and utilize ELF fields. For example, some birds are affected by weak magnetic fields,[18] and it is proposed that they may use terrestrial magnetic fields to aid in orientation.[20] Kalmijn has presented data suggesting that sharks and rays can locate prey by the weak ELF electric fields they produce, and that some fish may also be able to use terrestrial fields in obtaining orientational and navigational information.[5] Other biological effects from ELF fields have been reported by Goodman et al. on Physarum polycephalum[3] and by Gavalas-Medici and Day-Magdaleno on monkeys.[2]

Recently, large 60-Hz electric fields have been reported to reduce the growth of rats[10] and mice.[9] Noval et al.[13] have reported that 45-Hz vertical electric fields at field strengths of up to 100 V/m (RMS) produced reduced growth, reduced abdominal body fat, and altered brain and liver enzyme activities. The present work represents an attempt to verify the existence of lowered growth rates for rats exposed to similar 45-Hz, vertical electric fields and to determine if food and water consumption, serum metabolite concentrations, or the parameters of a complete blood count were perturbed. A preliminary report of this work has been submitted elsewhere.[12]

MATERIALS AND PROCEDURES

Animals. Male Sprague-Dawley rats, approximately 180 g, Har:(SD) (1), obtained from Hilltop Lab Animals, Inc., Scottdale, Pennsylvania, were used for all experiments. Animals were quarantined, evaluated for health status, and then randomly assigned to individual cages within the six exposure chambers of the irradiation facility. Body weight, food consumption, and water consumption data were obtained three times each week during the exposure period and the 5-day preexposure acclimatization period. The diet was a standard commercial rodent feed (Wayne Lab-Blox, Allied Mills, Inc., Chicago, Illinois) obtained in pulverized form for food consumption measurements. Food and water were provided ad libitum.

Irradiation facility. The irradiation facility has been described completely in a previous report.[11] It was contained in a typical laboratory room maintained under slight positive air pressure, minimizing outside contamination. Access was restricted to personnel concerned with this research, who wore clean gowns, masks, and gloves. Room air was circulated at 23 room-volumes per hour and filtered by HEPA and activated alumina filters. Illumination was provided 12 hours each day from room and chamber lights, beginning at 6:00 a.m. Temperature was controlled at $22^{\circ} \pm 2^{\circ}C$ and continuously recorded; relative humidity was not controlled, but a continuous record indicated it remained between 25 and 55 percent.

There were six identical exposure chambers contained in three racks, each rack consisting of an upper and a lower chamber. Each exposure chamber contained 16 nonmetallic cages described previously,[11] providing food from a 250-cm^3 glass jar and water from a glass sipper tube and 250-cm^3 glass bottle. Chambers were horizontal, parallel plate capacitors with an upper plate of aluminum screen, a lower plate of aluminum sheet, and an average plate separation of 46.4 ± 0.3 cm (S.D.).

A signal generating and signal monitoring system provided the sinusoidal 45-Hz voltage, which could be independently varied from a nominally zero

field strength value up to 1000 V/m (RMS) for each chamber. This system contained two signal generators to provide a backup generator if the primary signal generator failed and circuitry to sound an alarm if both systems failed. Voltage and frequency were routinely measured to within ± 0.5 percent.

The 45-Hz exposure field and existing ELF fields were measured by the Illinois Institute of Technology (IIT) Research Institute, Chicago, Illinois. Data were obtained for electric and magnetic fields at 15, 45, 60 and 180 Hz, and were presented in the report of this facility.[11] The largest ambient field (45-Hz fields turned off) was found at 60 Hz. The average value of the 60-Hz electric field per cage was obtained for each animal position.

Experimental design. Four experiments (lettered E through H) were performed using the six exposure chambers, each containing 16 animals housed one per cage (Table 1). Six groups of 16 animals at field strengths of 2, 10, 20, 50 and 100 V/m (RMS) plus a control were used in experiments E, F, and H in an attempt to determine whether a dose versus effect relationship exists. It was assumed in the experimental design that any dose effect relationship that might be found would be monotonic; i.e., if an alteration were observed at one

Table 1. Experimental Design and Animal Usage

Exposure conditions (V/m)	Experimental group			
	E	F	G	H
Controls	16	16	16,16,16	16
2	16	16		16
10	16	16		16
20	16	16	16,16,16	16
50	16	16		16
100	16	16		16
Animals/group	96	96	96	96
Total animals	384			

field strength, the alteration produced by a higher field strength would be at least as large. The field strengths chosen cover the range of field strengths reported by Noval et al.[13] as having produced the growth alteration previously mentioned. Experiment G was designed to maximize the number of animals for one field strength by using three chambers as controls and three chambers at a field strength of 20 V/m (RMS) (see Table 2). This configuration minimizes the chance of making a type-II error, i.e., the failure to declare a result significant for a fixed level if a real effect is present. The field strength of 20 V/m (RMS) was chosen because this value produced the effects observed by Noval et al.,[13] and it is approximately one hundred times greater than what the ELF Communications System would generate. Because of the large number of animals in each 45-Hz group of experiment G, a further classification into four 60-Hz field strength groups can be made (Table 3). This classification was analyzed using two-way analysis of variance to test for 45-Hz and 60-Hz effects, and to determine if the 45-Hz and 60-Hz fields interact. Chambers were permanently numbered from one through six for reference, and chamber

Table 2. Electric Field Strengths Applied to Each Chamber for Each Experiment

Exposure chamber		45-Hz field strength (V/m(RMS))			
Number	Position	Experiment			
		E	F	G	H
1	U	C	100	20	50
2	L	2	10	C	20
3	U	10	2	20	C
4	L	20	50	C	10
5	U	50	20	C	100
6	L	100	C	20	2

16 animals per chamber
C denotes control group (no 45-Hz fields applied)
U denotes upper chambers
L denotes lower chambers

Table 3. The Number of Animals in Each Group of the 45-Hz and 60-Hz Two-Way Analysis of Experiment G

Frequency (Hz) 60 / 45	Field strength (V/m(RMS))				Total animals
	.21-.42	.53-.84	1.1-1.7	2.6-3.8	
Field strength (V/m(RMS))					
0	24	8	12	4	48
20	12	4	24	8	48
Total animals	36	12	36	12	96

bias was minimized by utilizing each chamber as a control or for a given field strength only once (Table 2).

After the exposure period, animals were withdrawn from the exposure room one at a time, given an intraperitoneal injection of chloral hydrate at a dose of 36 mg per 100 g of body weight, and placed in a clean cage. When one animal from each group had been obtained and all six had become unconscious, the animals were taken to a separate room where euthanasia was completed by heart puncture and exsanguination. Three milliliters of blood anticoagulated with EDTA at a final concentration of 8 mM were used for hematological analysis. The remainder of the sample was allowed to clot for 1 hour at room temperature, then centrifuged at 600 x g for 15 min to remove the clot, separated into aliquots, and frozen at -60°C for later biochemical analysis. For experiments G and H, this procedure was modified in three ways to reduce the variability caused by recent food consumption and aggressive behavior exhibited by the six animals when placed together in one cage. First, food was withdrawn at 4:00 p.m. on the day before euthanasia; second, animals were kept in separate cages until euthanasia; and third, plasma was obtained from blood containing 5 mM potassium ethylenediaminetetraacetate by centrifugation at 600 x g for 15 minutes.

Biochemical analysis. Total protein and globulin assays were performed on the AutoAnalyzer (Technicon Corporation, Tarrytown, New York) by the technique of Sobocinski et al.[17] Glucose, cholesterol, triglycerides, and total lipids were assayed using commercial reagents and standards from Boehringer Mannheim Corporation (New York, N. Y.) with the following catalog numbers: 15715, 15738, 15989, and 15991, respectively. Unknowns and quantitative serum controls (Monitrol I and II, Dade Division, American Hospital Supply Corporation, Miami, Florida) were assayed simultaneously in a random sequence.

Hematology. Red and white cell counts were obtained using the Coulter Counter Model B (Coulter Electronics, Inc., Hialeah, Florida). Hematocrit values were obtained by reading capillary tubes after centrifugation, and hemoglobin was estimated by the cyanomethemoglobin method employing Drabkin's solution (Hycel, Inc., Houston, Texas).

Pathology. Necropsies were performed on a minimum of four randomly selected animals from each group. Specimens from the skin, brain, salivary gland, lung, heart, stomach, duodenum, cecum, colon, liver, spleen, kidney, urinary bladder, adrenal gland, pancreas, and testes were fixed in 10 percent buffered Formalin for histopathologic examination. Adrenal glands and spleen were weighed when removed from the body. Tissue preparation and staining were performed according to accepted methods as outlined in the Armed Forces Institute of Pathology Manual.[8] Hematoxylin and eosin were routinely used, but selected samples were submitted to Gomori's methenamine silver stain, Brown-Brenn tissue gram stain, and the periodic acid-Schiff (PAS) reaction.

Statistical analysis. Histograms of individual observations were used to determine if nonparametric statistical tests should be employed. Based on this evaluation, body weight, food consumption, and water consumption data were analyzed using the t-test or analysis of variance (parametric methods) followed by the Neuman-Keuls test[19] (nonparametric method) if significance was observed ($p < 0.05$). For biochemical and histological analyses, significance

($p < 0.05$) was tested using the one-way analysis and multiple pairwise comparisons of the Kruskal-Wallis tests[4] or the Mann-Whitney test[16] (nonparametric methods).

RESULTS

During these experiments the exposure facility operated without failure. Routine monitoring of the signal-generating systems (at least three times a week) revealed that the chamber voltages remained constant to within +4 and -2 percent, and the 45-Hz frequency did not vary more than ± 0.5 percent.

In this research, growth is defined as the net change in body weight of the test animal. Since the duration of these experiments was short (28 days) and since all animals used were approximately the same age, the average values of growth per day, food consumption per day, and water consumption per day are valid measures for comparing groups within an experiment. These values were calculated by obtaining the total change in body weight or the total weight of food or water consumed for each animal and dividing by 28 (number of days in the exposure period).

Analysis of growth, food consumption and water consumption during 45-Hz electric field exposure. The average body weight and the average growth per day for each group and each experiment are summarized in Figure 1. The cumulative food and water consumption and the food and water consumption per day for each group and each experiment are summarized in Figures 2 and 3. The daily summary of body weight, growth, and cumulative and daily consumption of food and water are presented in Appendix A. The strictly monotonic relationship observed for growth, food consumption, and water consumption showed that these experiments were well controlled. The small depressions observed in the body-weight change/day curves (e.g., in G experiment on days 10, 18 and 25) always occurred after the cage bedding was changed, and may have resulted from the animal's attempt to mark his new bedding by defecation.[15] Notice that

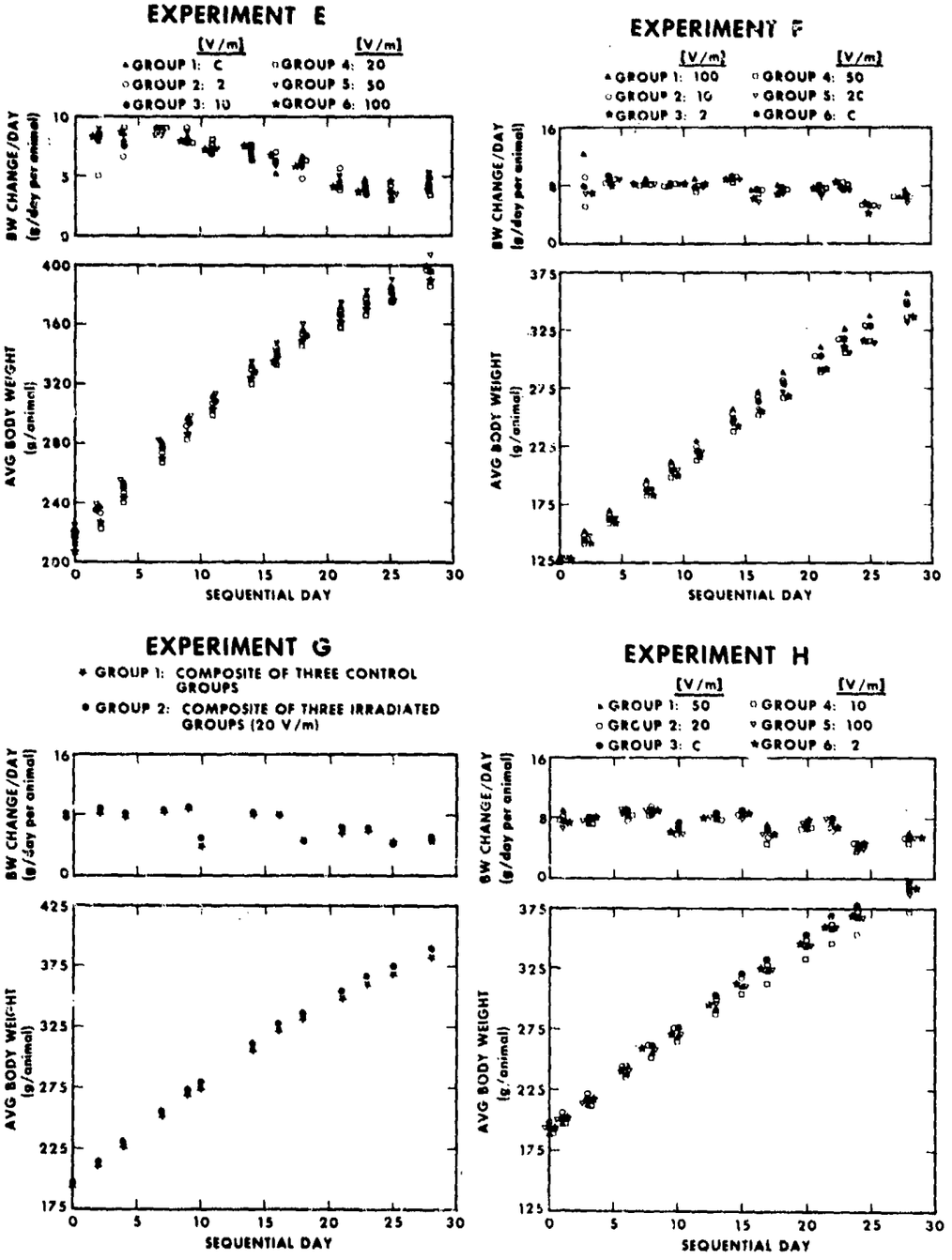

Figure 1. Graphical summary of the average body weight and daily growth for each group during exposure

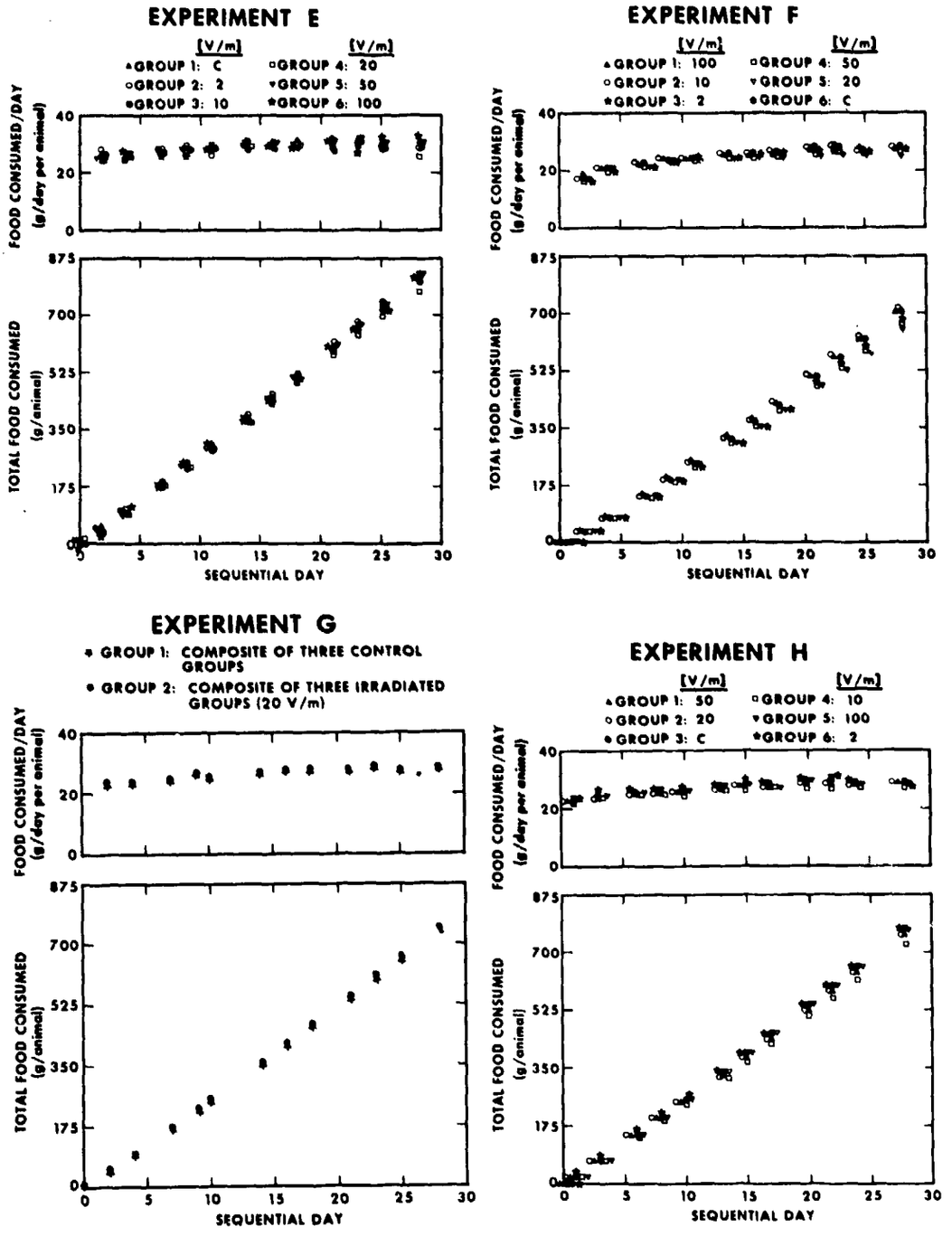

Figure 2. Graphical summary of food consumption data during exposure

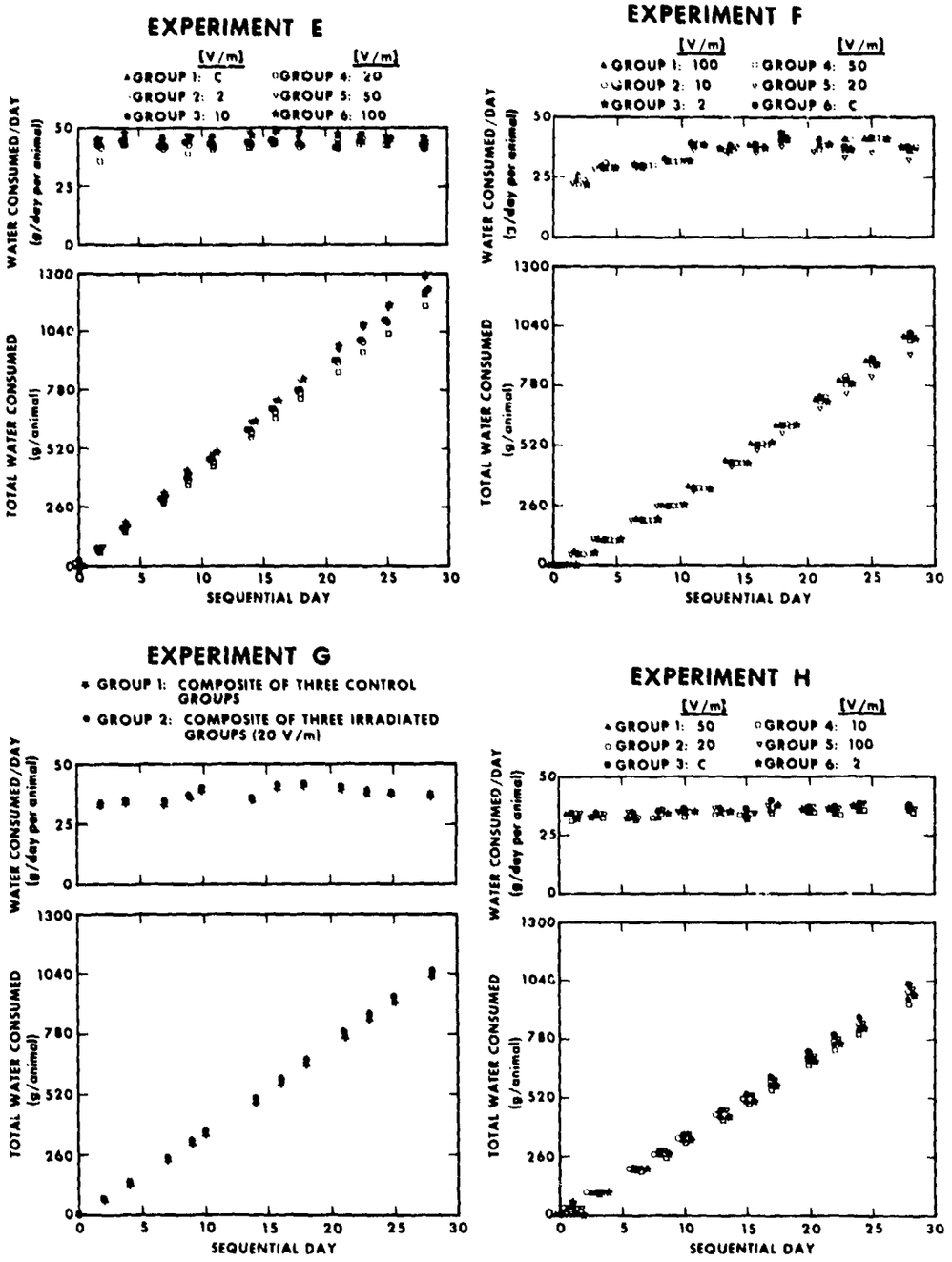

Figure 3. Graphical summary of water consumption data during exposure

these readily visible depressions in growth per day are the result of a virtually indistinguishable displacement in the average cumulative body weight curves.

In three experiments (E, G and H), no statistically significant differences were found between any experimental or control groups for growth per day, food consumption per day, or water consumption per day when these parameters were compared at the several 45-Hz exposure field strengths used (Table 4). In experiment F, statistical analysis revealed no difference in water consumption per day between any experimental or control groups, although differences

Table 4. Statistical Summary of the Analysis of Variance of Growth, Food Consumption and Water Consumption

Variable	Experiment			
	E	F	G	H
Δ BW/Δ day	-	**	-	-
Δ Food/Δ day	-	**	-	-
Δ Water/Δ day	-	-	-	-

\- Not significant ($p > 0.05$)
** Significant difference ($p < 0.01$)

in growth per day and food consumption per day were observed. For growth per day, significant differences ($p < 0.05$) were found between the 100 V/m group and the 2, 20, and 50 V/m groups, but not between that group and the control or 10 V/m groups. For food consumption per day the only difference ($p < 0.05$) was between the 20 V/m, 100 V/m, and 10 V/m groups but not between the control, 2 V/m, or 50 V/m groups. These differences are not biologically important, as suggested by the findings that (1) the differences observed in experiment F were not observed in experiments E, G and H, i.e., the alterations were not reproducible, and (2) no dose versus effect relationship was apparent from these differences (Figure 4). Thus, all four experiments indicate that rat growth, food consumption, and water consumption

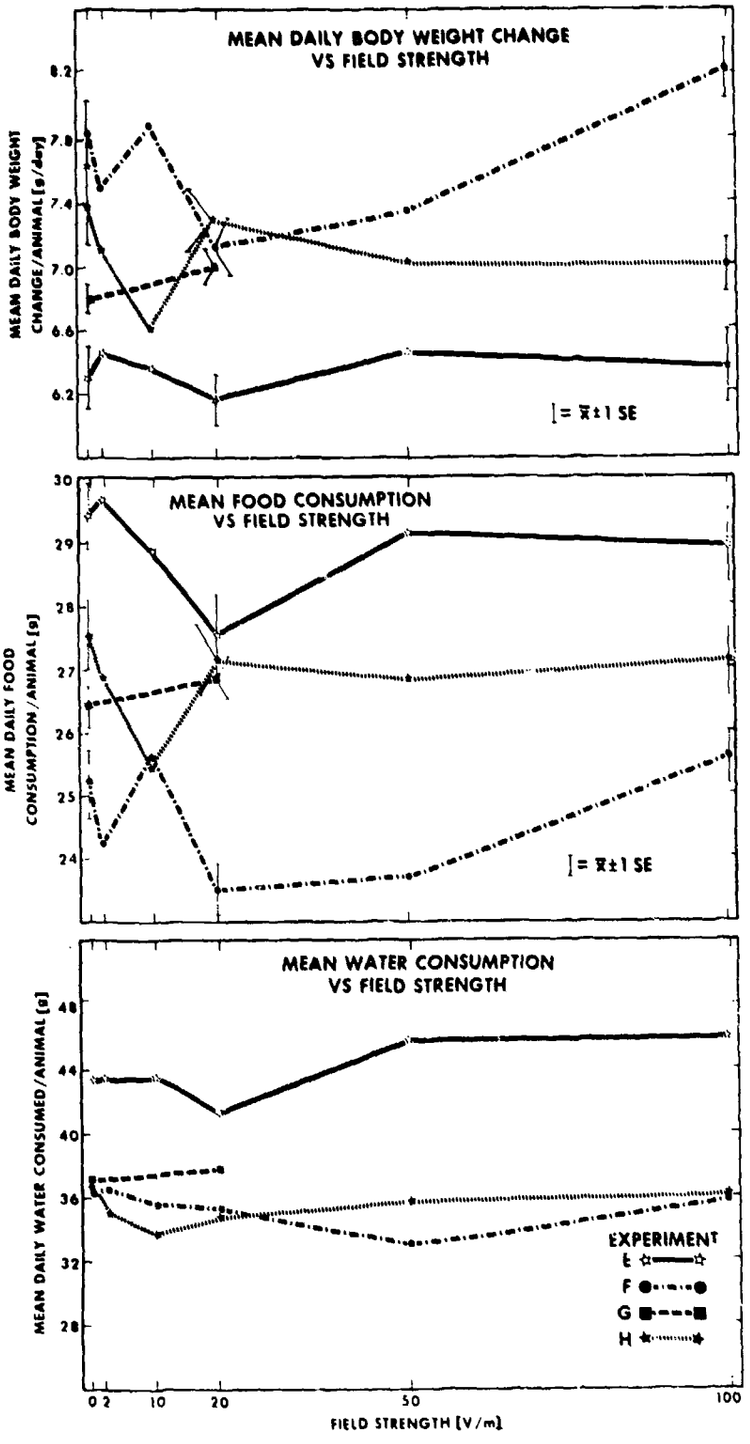

Figure 4. Summary of the mean growth, food and water consumption data versus 45-Hz field strength

were not altered by exposure to 45-Hz ELF electric fields of up to 100 V/m for up to 28 days.

Analysis of biochemical and hematological results versus 45-Hz field strength. In Appendix B are values for each biochemical and hematological parameter measured on all control and experimental animals and a statistical summary for each control and experimental group. Analysis of these data (Table 5) showed that no consistent alterations were found in any of the parameters measured in any of the four experiments performed. Findings for individual parameters are summarized below.

Table 5. Statistical Summary of the Kruskal-Wallis Analysis of the Blood Biochemistry and Hematology Data

Variable	Experiment			
	E	F	G	H
TP	-	-	-	*
GLOB	-	-	-	*
GLU	**	*	-	*
TL	**	-	-	-
CHOL	-	-	-	-
TRIG	-	-	-	-
RBC	**	**	-	-
WBC	-	-	-	-
POLY	-	-	-	-
LYHS	-	-	-	-
HCT	**	-	-	-
HGB	*	-	-	-
MONO	within normal limits			
EOS	within normal limits			

- Not significant ($p > 0.05$)
* Significant difference ($p < 0.05$)
** Significant difference ($p < 0.01$)

Total protein: In experiments E, F and G, no groups were statistically different from the control or from each other. In experiment H, only the control and 100 V/m group differed. No trend or dose relationship was observed (Figure 5).

Globulin: In experiments E, F and G, no groups were statistically different from the control or from each other. In experiment H, only the control and 100 V/m group differed. No trend or dose relationship was observed (Figure 5).

Glucose: In experiment G, where the statistical test should be most sensitive, the control and irradiated groups were not statistically different. In experiment E, only the control and 2 V/m groups differed. In experiment F, the control group, 20 V/m group, and 100 V/m group were statistically different; and in experiment H, only the control and 100 V/m groups were statistically different. No consistent pattern of statistical difference or dose relationship was observed throughout these experiments (Figure 5). In addition, some of the apparently large variability observed in experiments E and F may be due to the euthanasia procedure used (see below).

Total lipids: In experiments F, G and H, no groups were statistically different from the control or each other. In experiment E, only the 2 V/m group and the 100 V/m group differed. No trend or dose relationship was observed (Figure 6).

Cholesterol: In all experiments (E, F, G and H), no groups were statistically different from the control or from each other, and no trend or dose relationship was observed (Figure 6).

Triglycerides: In all experiments (E, F, G and H), no groups were statistically different from the control or each other, and no trend or dose relationship was observed (Figure 6).

Red blood cells: In experiments G and H, no groups were statistically different from the control or from each other. In experiment E, differences were found between the control and the 10, 50 and 100 V/m groups, but

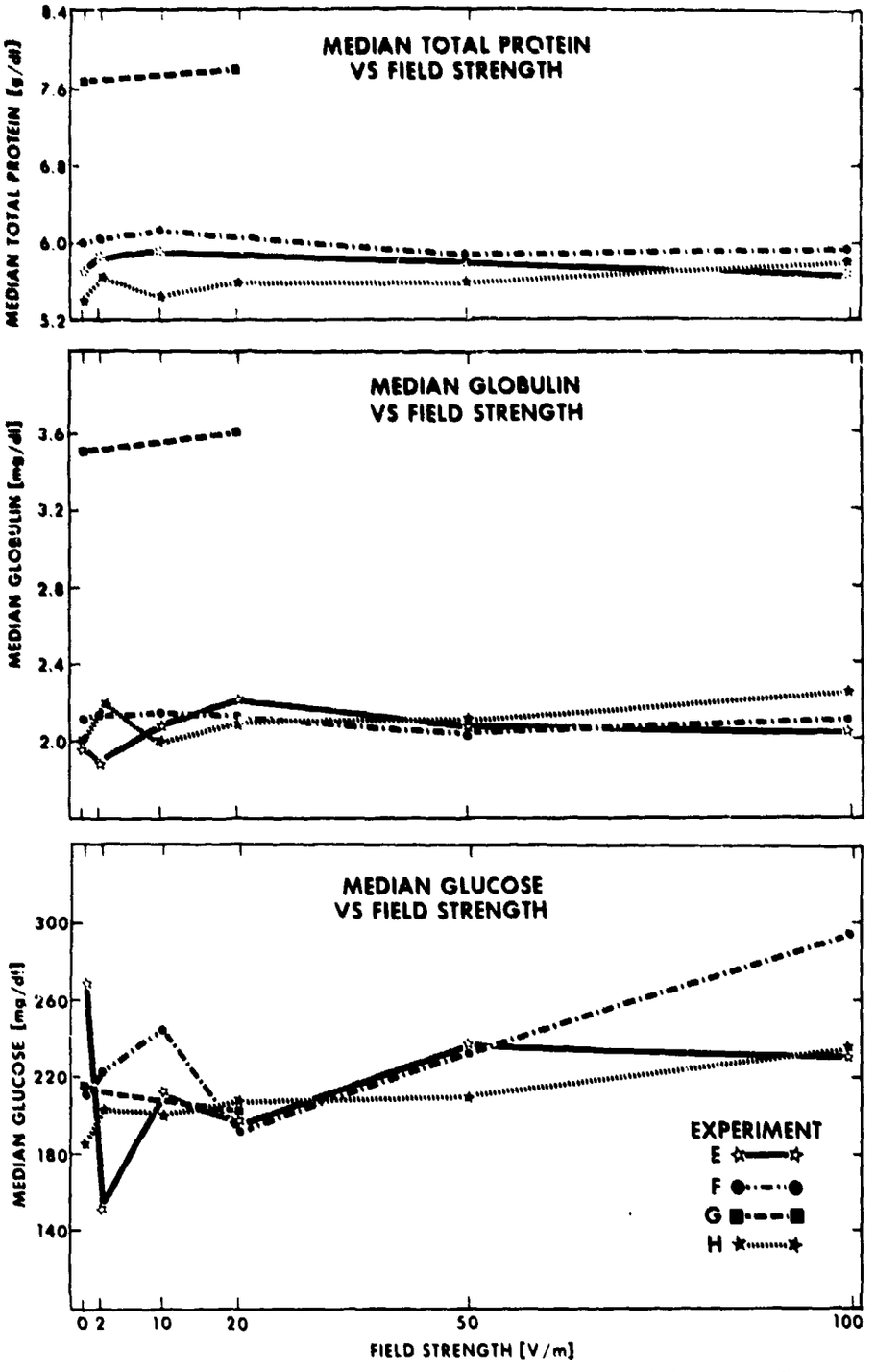

Figure 5. Summary of median total protein, globulin and glucose data versus 45-Hz field strength

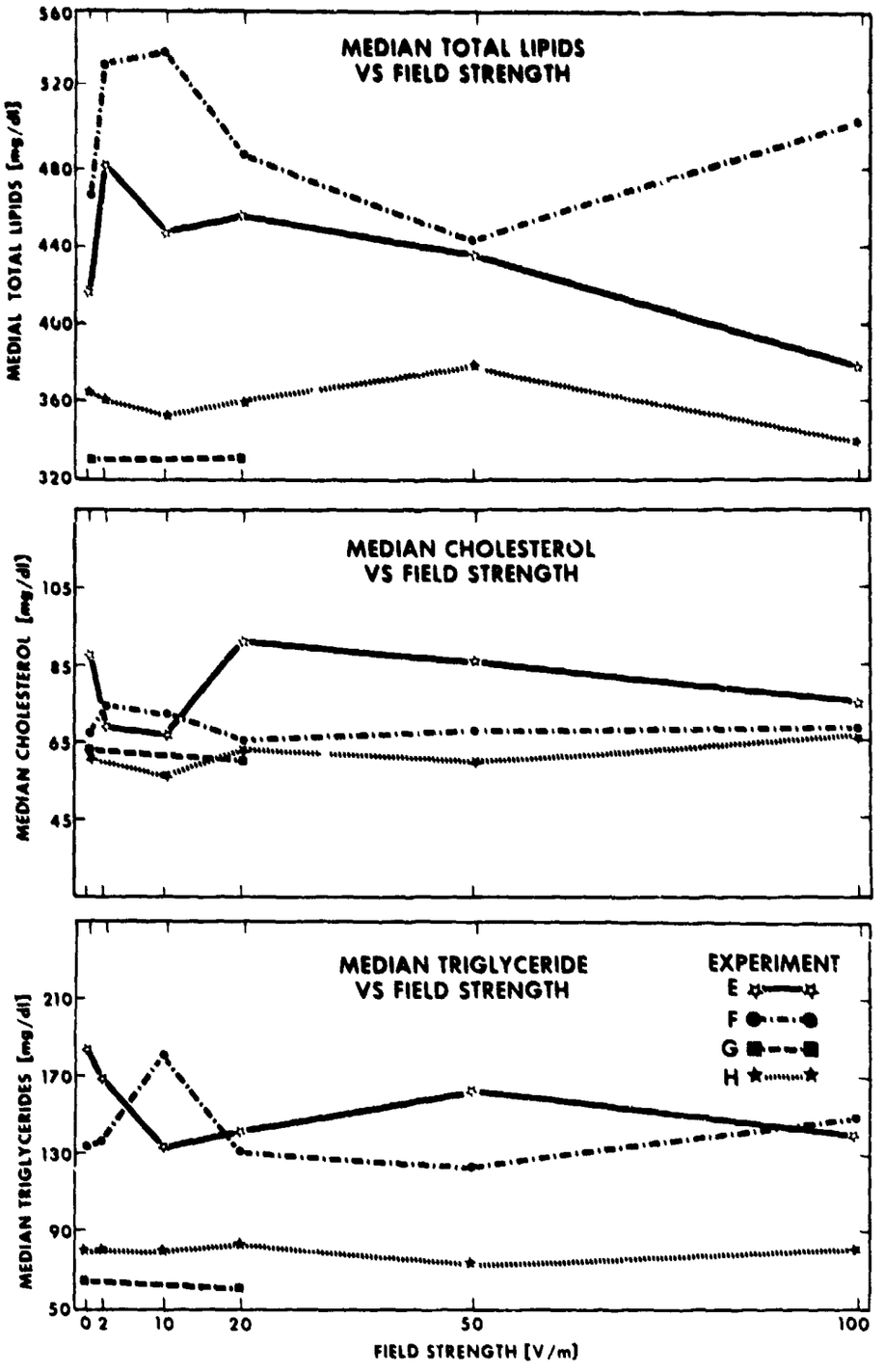

Figure 6. Summary of median total lipid, cholesterol and triglyceride data versus 45-Hz field strength

not between the 2 and 20 V/m groups. Additionally, statistically significant differences were found between the 2 V/m group and the 10, 20, 50 and 100 V/m groups. In experiment F, statistically significant differences were found between the control and the 2, 10 and 50 V/m groups. However, since these differences were not reproduced in experiments G and H, the pattern of statistical difference in experiments E and F may be related to the euthanasia procedure (see below). Considering all experiments, no trend or dose relationship was observed (Figure 7).

White blood cells: In all experiments (E, F, G and H), no groups were statistically different from the control or from each other, and no trend or dose relationship was observed (Figure 7).

Segmented neutrophils (POLY): In all experiments (E, F, G and H), no groups were statistically different from the control or from each other, and no trend or dose relationship was observed (Figure 7).

Lymphocytes: In all experiments (E, F, G and H), no groups were statistically different from the control or from each other, and no trend or dose relationship was observed (Figure 8).

Hematocrit: In experiments F, G and H, no groups were statistically different from the control or from each other. In experiment E, only the 2 V/m and 50 V/m groups were different from each other. No trend or dose relationship was observed (Figure 8).

Hemoglobin: In experiments F, G and H, no groups were statistically different from the control or from each other. In experiment E, only the 2 V/m and 50 V/m groups were different from each other. No trend or dose relationship was observed (Figure 8).

In experiments G and H, an improved euthanasia procedure was used in which plasma was obtained from control and irradiated animals that had fasted for approximately equal periods of time, and that were not excited since the animals had been caged separately until euthanasia to prevent stress. As a result of these improved procedures, marked reductions were noted in the group

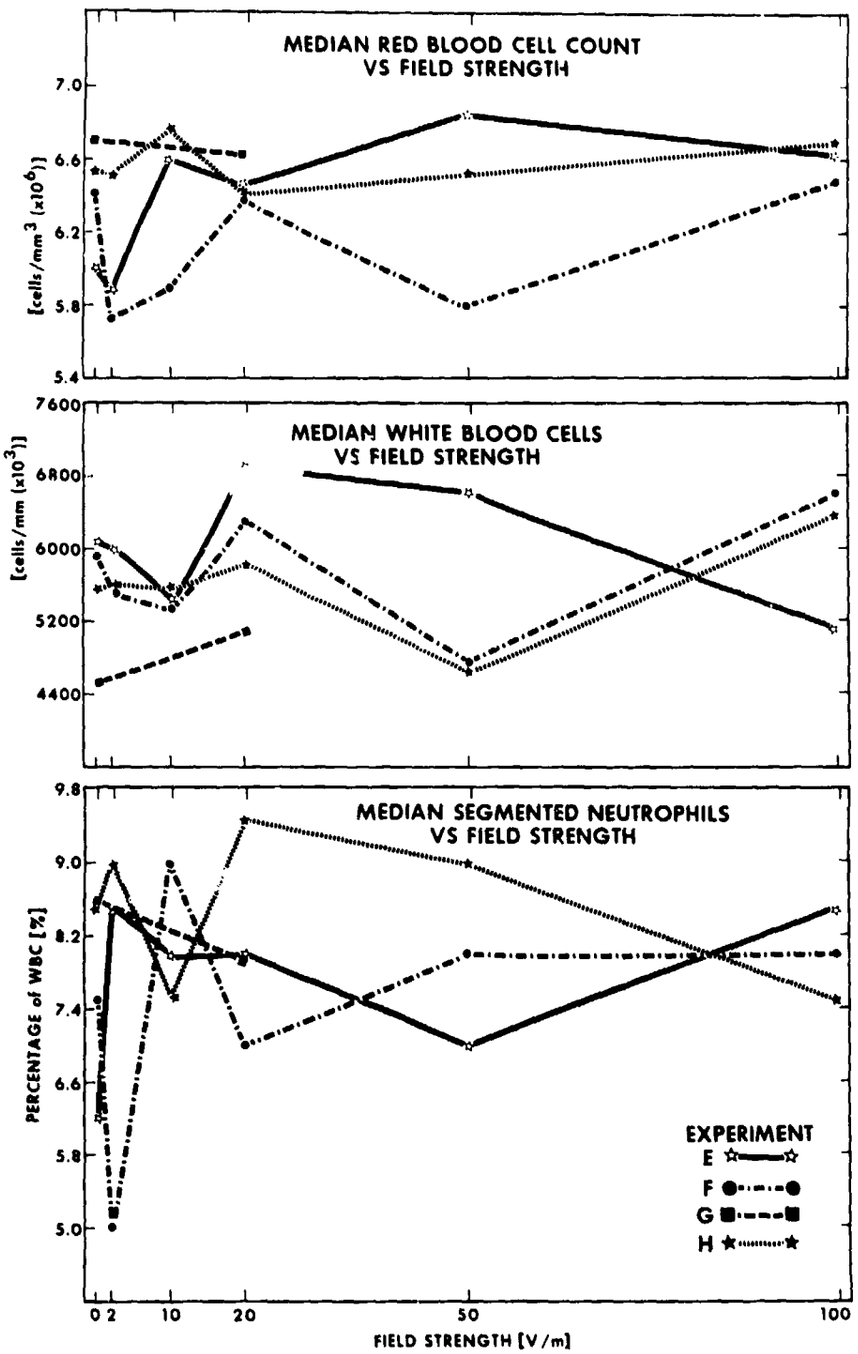

Figure 7. Summary of median red blood cell, white blood cell and segmented neutrophil data versus 45-Hz field strength

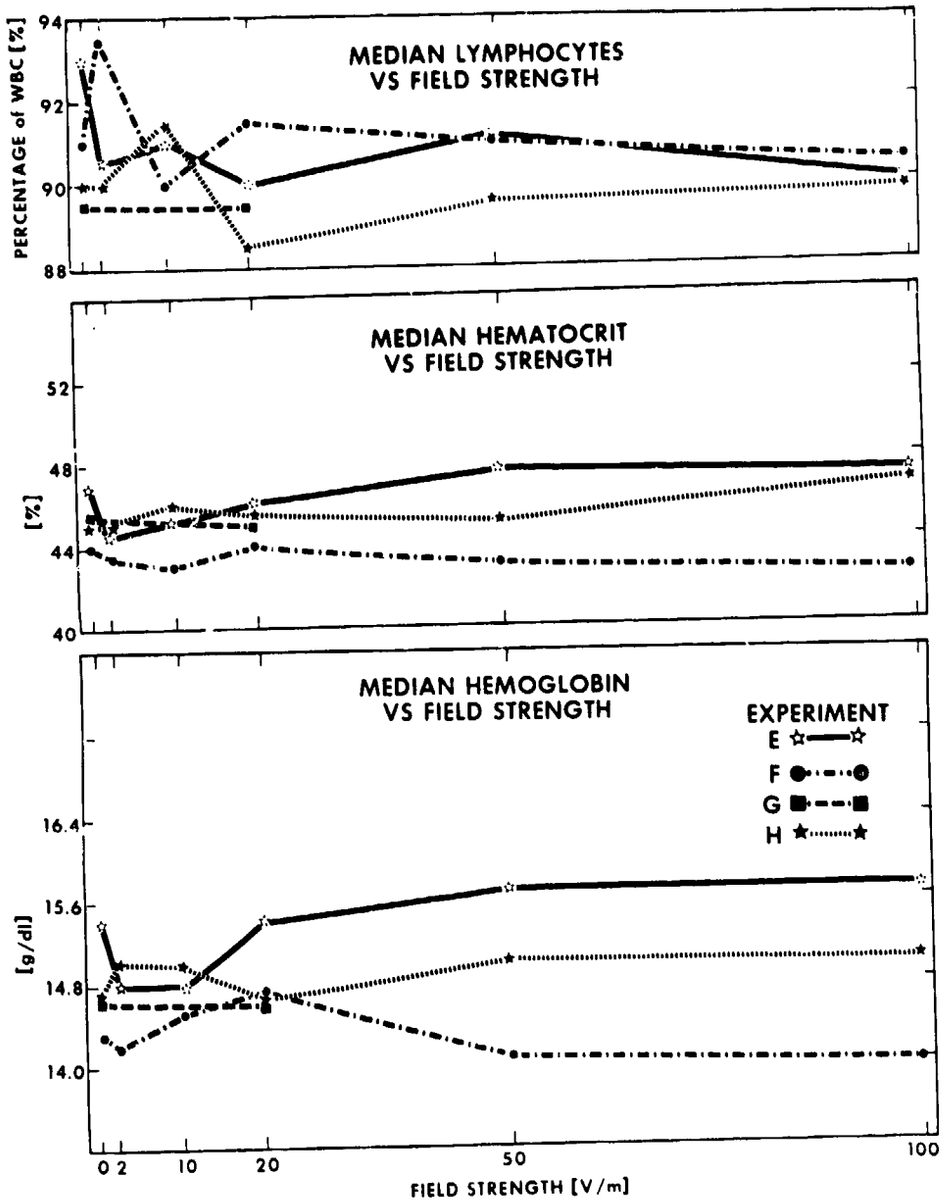

Figure 8. Summary of median lymphocyte, hematocrit and hemoglobin data versus 45-Hz field strength

to group variability (Figures 5-8) and the within group variability for glucose, total lipids, cholesterol, triglyceride, red blood cell, hematocrit, and hemoglobin values. It can be stated with a high degree of confidence that there were no differences in the plasma or serum values of the biochemical variables used

in this study. After completion of serum triglyceride assays for experiments E and F, it was observed that free glycerol was present in the commercial standards used. To correct the triglyceride values in experiments E and F, the values reported in Appendix B and the group medians of Figure 6 must be multiplied by 0.66. This constant factor does not alter the results from statistical analysis. The accuracy of this correction factor and of the measurements in experiments G and H was verified by using two independent standards (Precilip, Boehringer-Mannheim Corp., New York, N. Y., and Triolein, Sigma Chemical Company, St. Louis, Missouri) as well as the known molar extinction coefficient of the reduced form of nicotinamide-adenine-dinucleotide (NADH).

Pathology versus 45-Hz field strength. All animals used in this analysis were coded and analyzed in a blind manner. No gross lesions or differences in adrenal and spleen weights were observed at necropsy, and no significant microscopic changes were present in any of the tissues.

Two-way ANOVA for 45- and 60-Hz effects. Detailed analysis of field map data after completion of experiments E, F, G, and H suggested that the level of the contaminating 60-Hz electric field had been underestimated in the initial field map.[11] In an attempt to determine the effect of this field on the results of the 45-Hz analysis, the data from experiment G were separated into four groups according to the average 60-Hz field strength per cage for two-way analysis of variance as shown in Table 3. Since the experiment was not initially designed to examine possible 60-Hz effects, the two-way classification did not yield groups of equal size. In addition, random animal positioning at the beginning of the experiment happened to allow the group exposed to the highest 60-Hz field strength to start with an average initial body weight slightly heavier than the other groups. As a result, care must be taken when interpreting results of the two-way analysis of variance for growth per day, food consumption per day, and water consumption per day shown in Table 6. Despite these restrictions, certain statistically valid comparisons can be made. There were no statistically significant differences ($p < 0.05$) between the control and 20 V/m groups

Table 6. Statistical Summary of the Two-Way Analysis of Variance on 45-Hz and 60-Hz Field Strengths of Experiment G

Variable	Factor one 45 Hz	Factor two 60 Hz	Interaction
Δ BW/Δ day	-	-	-
Δ Food/Δ day	-	*	-
Δ Water/Δ day	-	**	-

- Not significant ($p > 0.05$)
* Significant ($p < 0.05$)
** Significant ($p < 0.01$)

at 45 Hz for growth per day, food consumption per day, or water consumption per day. Neither was the interaction between the 45-Hz and 60-Hz fields found to be significant for growth per day, food consumption per day, or water consumption per day. Further, there was no alteration of growth which is attributable to the 60-Hz field. The statistical differences observed in the data on food consumption per day and water consumption per day occurred only between the highest and lowest field strength groups. Thus, the statistically significant results obtained were most likely not biologically important because (1) the animals in the group exposed to the highest field strength started with an average initial body weight slightly heavier than the other groups, and (2) the food and water consumption correlated strongly with initial body weight. This conclusion is reinforced by the expectation that a biologically important alteration in food and water consumption would be reflected in a growth alteration. To complete the 60-Hz analysis, the biochemical and hematological data were tested for significance; results are presented in Table 7. No statistically significant differences were observed for glucose, total lipids, cholesterol, triglycerides, white blood cells, segmented neutrophils (POLY), lymphocytes, hematocrit, or hemoglobin. Significance occurred in total protein and globulin data only between the highest and next highest field strength groups, and in the red blood cell data only between the lowest and next lowest field strength groups.

Table 7. Statistical Summary of the Kruskal-Wallis Analysis on 60-Hz Field Strengths of Experiment G

Variable	Significance
TP	*
GLOB	**
GLU	-
TL	-
CHOL	-
TRIG	-
RBC	*
WBC	-
POLY	-
LYHS	-
HCT	-
HGB	-

- Not significant ($p > 0.05$)
* Significant difference ($p < 0.05$)
** Significant difference ($p < 0.01$)

Because no significant differences were observed for any variable between the highest and lowest field strength groups or between the two field strength groups with 36 animals each, no biological significance was attributed to these differences.

DISCUSSION AND CONCLUSIONS

Theoretically, ELF radiation can be separated into terrestrial and man-made radiation. The terrestrial field strength in the exposure facility was not measured, but is considered to be negligible compared to the experimental field strengths. Man-made fields at frequencies from 25 to 60 Hz are present anywhere electric power is used.[21] For example, under high-voltage power lines,

electric field strengths of thousands of volts per meter are found;[1] and in the laboratory, every operating electrical appliance is an ELF irradiator.[11] The man-made 45-Hz fields in our exposure facility were documented by the IIT Research Institute. They also documented a contaminating 60-Hz field which was present in all chambers, i.e., both irradiated and control.[11]

No biologically important differences were found for any of the variables studied. No statistically significant differences were observed in any experiment for the following variables: water consumption, serum or plasma cholesterol, serum or plasma triglycerides, white blood count, segmented neutrophils, lymphocytes, adrenal weights and spleen weights. No significant differences were observed in any of the histopathological analyses. For the following variables, the only observed significant statistical differences occurred between irradiated groups: growth per day, food consumption, serum or plasma total lipids and hemoglobin. Significant differences between the control and irradiated groups occurred only for total protein, globulin, red blood cells, and hematocrit. Further, no dose-relationship was observed between the exposure field strength and any of the variables studied. The most unequivocal results are from experiment G, in which 48 animals were used in both control and 20 V/m exposed groups. No significant differences were observed for any of the variables measured in this experiment.

The data from experiment G were subjected to two-way analysis of variance to test the possibility that the contaminating 60-Hz fields in the exposure facility affected the results of the 45-Hz analysis. No significant differences ($p < 0.05$) were found in growth per day for the 45-Hz or 60-Hz fields; further, no significant interaction was observed for growth per day, food consumption, or water consumption. These findings together with the fact that the two 60-Hz groups (of 36 animals each) were not significantly different from each other led to the conclusion that the 60-Hz fields in this experiment did not produce a biologically important alteration. From this analysis it is surmised that the data from the 45-Hz fields also were not affected.

A pilot experiment gives further indication that ambient fields did not perturb the negative finding of the 45-Hz analysis. In that experiment the average growth rate for 96 animals was found to be 7.8 grams per day per animal. These animals were fed and handled using procedures identical to those in experiments E, F, G, and H; however, they were housed in rat cages of standard No. 2 mesh and sheet stainless steel. At our request, the IIT Research Institute determined that these cages provide better than -40 dB of electric field shielding at 60 Hz (Appendix B of reference 11). Thus, these animals (in the pilot experiment) were grown for 28 days in an ambient 60-Hz electric field which was less than 0.010 V/m (RMS). If the ambient electric fields present in experiments E, F, G, and H had produced a growth reduction in all experimental groups of at least 20 percent (the smallest growth reduction reported by Noval et al.[13]), then these shielded animals would have growth rates greater than 9.2 grams per day per animal. Instead, the growth rate of the animals in this pilot experiment (7.8 grams per day per animal) is well within growth rates measured for the six groups of animals in experiment F (Figure 4) which were the same age as in the pilot study.

The findings of this research are consistent with the work of Knickerbocker et al.[6] and Krueger and Reed.[7] Knickerbocker et al. exposed male mice to a vertical electric field of 157,000 V/m at 60 Hz for 10-1/2 months (6-1/2 hours each day), and analyzed for differences in growth, reproduction, gross pathology, and histopathology. Although they noted that the unexposed male progenies of the exposed animals did not grow to be as heavy as the male progenies of the control animals, no other statistical or biological differences were observed. Krueger and Reed exposed female mice to horizontal electric fields of 100 V/m at both 45 Hz and 75 Hz. No statistical differences were observed between exposed and control animals in rate of growth, serotonin levels of blood and brain, or susceptibility to challenge by influenza virus.

After exposing 384 young, male Sprague-Dawley rats for 28 days to 45-Hz vertical electrical field strengths of 2, 10, 20, 50 and 100 V/m (RMS), no

biologically significant differences were observed for any of the measured variables. Further, no dose relationship was found for any of these variables versus the applied 45-Hz field strengths.

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APPENDIX A

Daily Summary of Body Weight, Growth, and Cumulative and Daily Consumption of Food and Water

The following seven tables (A-1 through A-7) summarize the actual raw growth and consumption data for each experimental group of the four experiments (E, F, G, and H). In addition, the dates were obtained and a summary of the temperature and relative humidity on those dates is provided. The field strength and chamber position (either upper or lower) for any group can be obtained from Table 2 of the text.

The headings for each column are defined (proceeding from left to right) as:

DATE: date these data were obtained; expressed as day/month/last digit of the year

DAY: the number of days these animals have been exposed

TEMP: the average ± the range of room temperature (^{O}F), taken over the interval from the previous data day to this day

HUMIDITY: the average ± the range of relative humidity (% RH), taken over the interval from the previous data day to this day

N: the number of animals in each group, either 16 or 48; or when an animal's food or water consumption could not be accurately measured due to an accident; (e.g., bottle was spilled), it then becomes the smallest number of animals used for any one of the calculations for this date

BODY WEIGHT:

- XBAR: the average mass (g) per animal for this group
- SD: the standard deviation of XBAR (g)

CHG. BODY WT:

XBAR	average change in mass per day (g/day) per animal for this group, taken over the interval from the previous data day to this day
SD	the standard deviation of XBAR (g/day)

FOOD CONSUMED AND WATER CONSUMED:

XBAR	average food (water) consumed per day (g/day) per animal for this group, taken over the interval from the previous data day to this day
SD	standard deviation of XBAR (g/day)
TOTAL TO DATE	average of cumulative food (water) consumed (g) per animal from day zero to this day
SD	standard deviation TOTAL TO DATE (g)
ASTERISK (*)	this symbol is used to note that the data from all animals could not be used; where N = 16 for experiments E, F, and H, or N = 48 for experiment G. Further information is provided in the next paragraph

It was necessary to delete three animals from experiment F because they accidently went without water over a weekend. This accident occurred early in this experiment, and animals resumed normal drinking, eating, and growth values; therefore, these animals were not deleted from the biochemical and hematological analyses. Because one animal was deleted from group two (Table A-3) and two animals were deleted from group six (Table A-4), asterisks indicate that fewer than the usual number of animals were used for each day.

TABLE A-1

EXPERIMENT E

GROUP 1

DATE	DAY	TEMP	HUMIDITY	N	BODY WEIGHT XBAR	BODY WEIGHT SD	CHG. BODY WT. XBAR	CHG. BODY WT. SD	FOOD CONSUMED XBAR	FOOD CONSUMED SD	FOOD CONSUMED TOTAL TO DATE	FOOD CONSUMED SD	WATER CONSUMED XBAR	WATER CONSUMED SD	WATER CONSUMED TOTAL TO DATE	WATER CONSUMED SD
7/ 4/3	0	0+0-0	0+ 0-	0	16	221.93	12.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9/ 4/3	2	72+0-0	28+ 0-	1	16	237.00	13.17	7.93	1.18	26.40	1.51	52.80	3.03	42.48	4.93	84.96	9.86
11/ 4/3	4	72+0-0	34+ 1-	2	16	253.68	14.69	7.94	1.98	26.38	1.88	105.57	5.97	44.51	5.42	173.97	20.18
14/ 4/3	7	72+0-1	38+ 1-	2	16	280.35	16.88	8.89	1.83	28.19	1.79	198.14	9.59	43.15	6.48	303.43	38.46
16/ 4/3	9	72+0-0	42+ 2-	1	16	296.76	18.74	8.28	1.13	28.75	1.64	247.64	12.33	44.18	5.87	391.78	49.94
18/ 4/3	11	71+1-0	42+ 6-	2	15	311.44	19.54	7.34	3.58	28.88	1.85	303.88	14.67	42.65	6.10	476.53	68.55
21/ 4/3	14	71+0-0	40+ 8-	2	16	332.85	23.91	6.87	1.67	29.88	2.50	393.43	19.97	43.14	6.63	605.94	88.45
23/ 4/3	16	72+0-0	42+ 6-	2	16	342.53	26.43	5.25	3.21	30.57	2.73	454.58	24.20	44.05	7.14	694.84	94.02
25/ 4/3	18	70+2-0	57+ 0-	1	16	355.81	26.56	6.63	2.97	31.43	3.25	517.44	29.60	45.63	7.08	781.31	106.20
28/ 4/3	21	71+0-0	43+ 0-	3	16	369.77	28.63	4.65	1.63	30.67	2.07	609.44	34.59	43.96	6.92	913.20	126.12
30/ 4/3	23	71+0-0	53+ 0-	1	16	379.23	29.14	4.73	1.67	31.66	3.09	672.77	39.35	45.96	6.99	1001.12	139.37
2/ 5/3	25	71+0-0	54+ 0-	1	16	385.19	28.28	2.98	1.48	29.92	3.22	734.07	44.69	42.46	6.36	1086.04	151.56

GROUP 2

DATE	DAY	TEMP	HUMIDITY	N	BODY WEIGHT XBAR	BODY WEIGHT SD	CHG. BODY WT. XBAR	CHG. BODY WT. SD	FOOD CONSUMED XBAR	FOOD CONSUMED SD	FOOD CONSUMED TOTAL TO DATE	FOOD CONSUMED SD	WATER CONSUMED XBAR	WATER CONSUMED SD	WATER CONSUMED TOTAL TO DATE	WATER CONSUMED SD
7/ 4/3	0	0+0-0	0+ 0-	0	16	217.44	14.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9/ 4/3	2	72+0-0	28+ 0-	1	16	233.93	14.58	8.24	1.82	28.32	3.99	56.64	7.98	42.23	6.13	84.45	12.27
11/ 4/3	4	72+0-0	34+ 1-	2	16	247.26	14.84	6.66	3.31	25.96	1.80	108.56	9.50	43.06	4.87	170.56	18.62
14/ 4/3	7	72+0-1	38+ 1-	2	16	273.93	21.75	8.89	5.88	28.33	6.06	193.54	22.44	41.51	11.95	295.08	58.74
16/ 4/3	9	72+0-0	42+ 2-	1	16	292.88	19.19	9.88	3.26	29.74	2.99	253.81	26.59	43.61	6.29	382.29	58.88
18/ 4/3	11	71+1-0	42+ 6-	2	13	307.34	18.56	7.63	1.67	26.32	9.44	305.65	24.88	42.86	5.48	466.36	65.26
21/ 4/3	14	71+0-0	40+ 8-	2	16	329.45	19.23	7.37	1.84	31.50	2.67	400.14	24.46	43.27	5.84	598.16	80.90
23/ 4/3	16	72+0-0	42+ 6-	2	16	343.56	18.56	7.05	1.58	30.67	2.85	461.48	28.46	44.55	6.82	688.06	91.72
25/ 4/3	18	70+2-0	57+ 0-	1	16	353.24	18.07	4.84	4.00	30.61	4.58	522.71	29.03	42.03	9.34	772.13	100.26
28/ 4/3	21	71+0-0	43+ 0-	3	16	370.27	19.22	5.68	1.87	32.14	2.91	619.12	32.37	45.14	8.37	907.54	120.98
30/ 4/3	23	71+0-0	53+ 0-	1	16	378.18	20.81	3.91	1.51	31.17	2.97	681.46	37.06	45.73	10.28	998.99	135.74
2/ 5/3	25	71+0-0	54+ 0-	1	16	384.53	20.68	3.21	1.55	29.98	2.54	741.41	38.49	41.87	6.14	1087.34	153.58

GROUP 3

DATE	DAY	TEMP	HUMIDITY	N	BODY WEIGHT XBAR	BODY WEIGHT SD	CHG. BODY WT. XBAR	CHG. BODY WT. SD	FOOD CONSUMED XBAR	FOOD CONSUMED SD	FOOD CONSUMED TOTAL TO DATE	FOOD CONSUMED SD	WATER CONSUMED XBAR	WATER CONSUMED SD	WATER CONSUMED TOTAL TO DATE	WATER CONSUMED SD
7/ 4/3	0	0+0-0	0+ 0-	0	16	213.76	9.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9/ 4/3	2	72+0-0	28+ 0-	1	16	226.89	17.35	6.57	6.24	24.81	4.89	49.63	8.17	38.33	9.65	76.67	19.38
11/ 4/3	4	72+0-0	34+ 1-	2	16	244.11	12.14	8.61	3.93	25.64	1.52	100.98	8.91	43.35	3.63	163.36	18.38
14/ 4/3	7	72+0-1	38+ 1-	2	16	270.94	12.72	8.94	1.29	27.72	1.45	184.86	11.22	42.83	3.66	289.45	25.36
16/ 4/3	9	72+0-0	42+ 2-	1	16	286.81	13.34	7.93	1.77	28.53	3.34	241.13	16.64	39.55	12.61	368.54	42.41
18/ 4/3	11	71+1-0	42+ 6-	2	16	301.31	14.59	7.25	1.62	27.84	1.84	296.82	18.20	41.45	4.88	451.44	48.93
21/ 4/3	14	71+0-0	40+ 8-	2	16	322.71	16.28	7.13	1.16	29.17	1.94	384.34	22.38	41.89	3.77	577.11	57.69
23/ 4/3	16	72+0-0	42+ 6-	2	16	335.13	16.65	6.21	1.43	29.38	2.49	443.10	25.79	42.89	3.42	662.89	63.15
25/ 4/3	18	70+2-0	57+ 0-	1	16	346.88	17.19	5.88	1.09	28.81	2.41	500.72	29.60	41.19	3.53	745.27	67.27
28/ 4/3	21	71+0-0	43+ 0-	3	16	357.84	22.85	3.65	3.23	28.10	4.83	585.03	41.32	40.02	8.53	865.37	83.73
30/ 4/3	23	71+0-0	53+ 0-	1	16	366.15	20.85	4.15	2.77	29.72	2.79	644.48	44.58	42.48	3.94	950.14	88.61
2/ 5/3	25	71+0-0	54+ 0-	1	16	373.73	20.60	3.79	1.04	28.04	1.61	701.31	46.79	41.87	4.28	1033.88	95.05

TABLE A-2

EXPERIMENT 2

GROUP 4

DATE	DAY	TEMP	HUMIDITY	N	BODY WEIGHT XBAR	BODY WEIGHT SD	CHG. BODY WT. XBAR	CHG. BODY WT. SD	FOOD CONSUMED XBAR	FOOD CONSUMED SD	FOOD CONSUMED TOTAL TO DATE	FOOD CONSUMED TOTAL TO DATE SD	WATER CONSUMED XBAR	WATER CONSUMED SD	WATER CONSUMED TOTAL TO DATE	WATER CONSUMED TOTAL TO DATE SD
7/ 4/5	0	0+0-0	0+ 0- 0	16	216.50	12.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9/ 4/5	2	72+0-0	28+ 0- 1	16	238.48	15.97	6.75	6.86	25.49	4.06	50.98	9.73	39.93	10.28	79.86	20.40
11/ 4/5	4	72+0-0	34+ 1- 2	16	247.82	18.65	8.31	4.73	25.32	4.65	101.62	14.05	43.52	9.28	166.89	29.33
14/ 4/5	7	72+0-1	38+ 1- 2	16	273.87	19.41	8.95	1.18	27.71	2.15	184.76	18.84	43.82	5.72	295.96	43.27
16/ 4/5	9	72+0-0	42+ 2- 1	16	289.64	19.48	7.89	1.85	27.68	2.88	240.13	22.39	43.48	5.72	382.91	53.57
18/ 4/5	11	71+1-0	42+ 6- 2	16	305.87	19.56	8.12	1.29	28.91	2.23	297.95	26.31	44.81	5.19	478.94	63.00
21/ 4/5	14	71+0-0	48+ 8- 2	16	325.95	20.38	6.69	1.28	28.75	2.29	384.19	32.78	43.70	6.84	682.83	82.68
23/ 4/5	16	72+0-0	42+ 6- 2	16	338.75	21.54	6.48	1.53	29.82	3.30	443.82	37.14	44.05	5.30	690.13	92.92
25/ 4/5	18	70+2-0	57+ 0- 1	16	352.23	22.72	6.74	1.77	29.19	2.67	502.19	42.00	43.86	4.95	777.84	102.35
28/ 4/5	21	71+0-0	43+ 0- 3	16	366.74	23.84	4.84	1.58	29.43	2.63	591.26	48.77	43.87	5.87	909 45	119.22
30/ 4/5	23	71+0-0	53+ 0- 1	16	374.33	24.58	1.79	1.32	30.92	3.15	653.10	51.97	44.55	5.37	998.54	129.25
2/ 5/5	25	71+0-0	54+ 0- 1	16	382.59	24.22	4.13	2.20	28.36	2.23	710.90	55.98	44.14	6.12	1086.83	140.04

GROUP 5

DATE	DAY	TEMP	HUMIDITY	N	BODY WEIGHT XBAR	BODY WEIGHT SD	CHG. BODY WT. XBAR	CHG. BODY WT. SD	FOOD CONSUMED XBAR	FOOD CONSUMED SD	FOOD CONSUMED TOTAL TO DATE	FOOD CONSUMED TOTAL TO DATE SD	WATER CONSUMED XBAR	WATER CONSUMED SD	WATER CONSUMED TOTAL TO DATE	WATER CONSUMED TOTAL TO DATE SD
7/ 4/5	0	0+0-0	0+ 0- 0	16	214.47	12.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9/ 4/5	2	72+0-0	28+ 0- 1	16	231.05	13.67	8.29	1.29	25.57	1.88	51.13	3.75	42.38	4.52	84.68	9.03
11/ 4/5	4	72+0-0	34+ 1- 2	16	247.33	14.19	8.14	1.75	26.02	2.13	103.18	7.68	42.13	13.19	168.85	30.24
14/ 4/5	7	72+0-1	38+ 1- 2	16	273.49	17.38	8.72	1.58	27.32	2.71	185.14	15.43	43.47	5.24	299.26	41.99
16/ 4/5	9	72+0-0	42+ 2- 1	16	290.45	19.87	8.48	1.82	28.20	2.94	241.54	20.90	43.62	4.92	386.51	50.38
18/ 4/5	11	71+1-0	42+ 6- 2	16	305.48	19.23	7.52	2.82	28.55	1.52	298.64	22.69	44.40	4.59	475.31	56.74
21/ 4/5	14	71+0-0	48+ 8- 2	16	325.98	22.47	6.81	1.77	29.24	3.82	386.37	30.95	45.94	5.91	615.12	72.14
23/ 4/5	16	72+0-0	42+ 6- 2	16	339.37	24.12	6.73	1.48	29.50	2.38	445.37	34.99	45.87	4.18	704.85	79.35
25/ 4/5	18	70+2-0	57+ 0- 1	16	352.06	24.70	6.34	1.78	29.64	2.20	504.66	37.65	45.71	5.35	796.25	83.24
28/ 4/5	21	71+0-0	43+ 0- 3	15	365.54	26.20	4.50	0.92	30.00	2.44	595.04	48.24	44.06	4.64	928.44	99.40
30/ 4/5	23	71+0-0	53+ 0- 1	16	373.27	26.32	3.86	1.24	28.86	12.24	648.76	47.35	44.56	5.70	1017.65	105.70
2/ 5/5	25	71+0-0	54+ 0- 1	16	381.44	27.10	4.09	1.47	29.84	3.29	711.11	54.63	45.03	5.00	1107.60	116.36

GROUP 6

DATE	DAY	TEMP	HUMIDITY	N	BODY WEIGHT XBAR	BODY WEIGHT SD	CHG. BODY WT. XBAR	CHG. BODY WT. SD	FOOD CONSUMED XBAR	FOOD CONSUMED SD	FOOD CONSUMED TOTAL TO DATE	FOOD CONSUMED TOTAL TO DATE SD	WATER CONSUMED XBAR	WATER CONSUMED SD	WATER CONSUMED TOTAL TO DATE	WATER CONSUMED TOTAL TO DATE SD
7/ 4/5	0	0+0-0	0+ 0- 0	16	215.45	16.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9/ 4/5	2	72+0-0	28+ 0- 1	16	232.84	16.79	8.38	1.16	26.46	1.98	52.91	3.97	44.85	4.68	89.70	9.21
11/ 4/5	4	72+0-0	34+ 1- 2	16	249.84	19.48	8.58	1.58	27.23	2.12	107.36	7.99	48.62	6.28	186.94	20.88
14/ 4/5	7	72+0-1	38+ 1- 2	16	275.41	20.45	8.79	0.68	28.44	3.08	193.68	16.73	46.85	5.50	327.48	36.17
16/ 4/5	9	72+0-0	42+ 2- 1	16	291.56	22.97	8.87	1.86	29.86	2.77	250.79	21.96	47.11	5.73	421.69	46.56
18/ 4/5	11	71+1-0	42+ 6- 2	14	305.57	23.69	7.81	1.68	28.58	1.92	307.79	23.69	47.38	5.99	516.01	57.43
21/ 4/5	14	71+0-0	48+ 8- 2	16	329.29	27.87	7.91	1.91	30.69	3.38	399.86	33.29	49.82	7.78	663.07	79.96
23/ 4/5	16	72+0-0	42+ 6- 2	16	341.64	27.33	6.18	1.51	31.55	3.51	462.96	39.53	48.46	8.56	750.99	95.63
25/ 4/5	18	70+2-0	57+ 0- 1	16	352.96	29.97	5.66	2.94	30.23	4.98	525.41	48.33	46.09	11.14	852.17	114.77
28/ 4/5	21	71+0-0	43+ 0- 3	16	366.47	32.98	4.50	1.72	32.21	2.93	620.04	55.12	48.34	9.74	998.67	142.42
30/ 4/5	23	71+0-0	53+ 0- 1	16	374.81	34.03	4.17	1.52	31.62	4.35	683.28	62.44	48.63	10.35	1095.92	161.40
2/ 5/5	25	71+0-0	54+ 0- 1	16	382.86	35.42	4.02	1.45	30.57	4.31	744.41	70.83	45.07	9.43	1186.06	165.27

TABLE A-3

EXPERIMENT F

GROUP 1

DATE	DAY	TEMP	HUMIDITY	N	BODY WEIGHT XBAR	BODY WEIGHT SD	CHG. BODY WT. XBAR	CHG. BODY WT. SD	FOOD CONSUMED XBAR	FOOD CONSUMED SD	FOOD CONSUMED TOTAL TO DATE	FOOD CONSUMED SD	WATER CONSUMED XBAR	WATER CONSUMED SD	WATER CONSUMED TOTAL TO DATE	WATER CONSUMED SD
12/ 5/5	0	0+0-0	0+ 0- 0	16	127.24	10.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14/ 5/5	2	72+1-1	62+ 2- 2	16	152.89	12.78	12.43	1.66	18.75	1.52	37.49	3.04	24.98	2.53	49.97	5.07
16/ 5/5	4	72+1-0	56+ 1- 1	16	170.14	12.85	9.03	1.09	21.25	1.94	79.99	6.39	29.44	2.85	108.86	10.08
19/ 5/5	7	72+1-0	57+ 1- 1	16	196.42	15.03	8.76	1.41	22.38	2.08	147.13	12.38	29.25	2.88	196.62	18.33
21/ 5/5	9	73+0-0	58+ 0- 0	16	212.57	15.29	8.07	1.04	24.28	2.29	195.69	16.37	32.46	2.82	261.54	23.83
23/ 5/5	11	74+0-1	63+ 0- 3	16	230.52	16.98	8.98	1.79	24.59	2.27	244.87	20.52	39.28	4.43	348.11	31.83
26/ 5/5	14	75+0-3	70+10-10	16	257.69	18.56	9.86	1.57	25.76	2.54	322.16	27.25	37.86	4.29	451.29	43.53
28/ 5/5	16	78+0-1	64+ 4- 4	16	272.65	20.27	7.48	1.62	25.79	2.13	373.75	30.78	38.77	4.72	528.83	51.80
30/ 5/5	18	72+0-0	58+ 2- 0	16	298.86	20.48	8.11	1.83	26.11	2.00	425.58	34.34	40.45	3.78	609.73	58.40
2/ 6/5	21	72+1-0	61+ 1- 0	15	311.38	22.88	7.51	1.61	27.77	2.10	509.30	38.77	38.88	4.34	727.54	68.37
4/ 6/5	23	71+0-1	62+ 1- 0	15	327.82	22.92	7.62	2.56	28.98	3.42	567.33	41.71	40.90	4.41	800.54	75.24
6/ 6/5	25	66+2-0	60+ 0- 0	16	338.44	24.57	5.71	1.81	28.48	2.45	624.12	44.80	41.48	4.51	892.29	82.82
9/ 6/5	28	71+0-0	60+ 0- 0	16	357.97	25.58	6.51	0.97	27.89	1.96	707.88	49.64	36.96	4.17	1003.18	92.66

GROUP 2

DATE	DAY	TEMP	HUMIDITY	N	BODY WEIGHT XBAR	BODY WEIGHT SD	CHG. BODY WT. XBAR	CHG. BODY WT. SD	FOOD CONSUMED XBAR	FOOD CONSUMED SD	FOOD CONSUMED TOTAL TO DATE	FOOD CONSUMED SD	WATER CONSUMED XBAR	WATER CONSUMED SD	WATER CONSUMED TOTAL TO DATE	WATER CONSUMED SD
12/ 5/5	0	0+0-0	0+ 0- 0	16	129.65	8.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14/ 5/5	2	72+1-1	62+ 2- 2	15	148.20	9.37	9.32	3.68	19.18	1.85	36.35	3.17	25.07	3.45	50.13	6.66
16/ 5/5	4	72+1-0	56+ 1- 1	15	166.44	11.22	9.00	2.00	21.35	1.60	79.05	6.31	30.63	4.28	111.40	14.12
19/ 5/5	7	72+1-0	57+ 1- 1	15	191.72	12.64	8.43	2.43	23.00	1.75	148.30	10.84	29.81	3.57	200.83	23.98
21/ 5/5	9	73+0-0	58+ 0- 0	15	208.21	13.04	8.24	2.56	24.82	2.06	197.95	13.47	32.48	3.58	265.79	30.45
23/ 5/5	11	74+0-1	63+ 0- 3	15	224.54	14.68	8.17	2.76	24.89	2.10	247.72	17.11	40.15	4.86	346.09	38.78
26/ 5/5	14	75+0-3	70+10-10	15	252.26	16.12	9.24	2.77	25.70	2.00	324.81	22.85	37.97	4.52	459.59	51.30
28/ 5/5	16	78+0-1	64+ 4- 4	15	267.53	16.57	7.63	2.34	26.26	2.18	377.33	26.54	38.78	4.23	537.55	58.87
30/ 5/5	18	72+0-0	58+ 2- 0	15	282.38	17.97	7.43	2.50	27.60	3.12	432.69	28.71	43.41	5.51	624.37	69.95
2/ 6/5	21	72+1-0	61+ 1- 0	14	302.05	18.81	7.22	3.09	28.21	1.92	517.34	33.61	39.60	6.21	745.17	83.16
4/ 6/5	23	71+0-1	62+ 1- 0	15	319.69	20.99	8.55	4.38	29.41	2.59	576.16	38.12	41.27	4.47	805.71	91.04
6/ 6/5	25	66+2-0	60+ 0- 0	15	330.33	22.97	5.32	1.99	28.26	1.73	632.60	40.90	41.84	3.92	907.79	98.04
9/ 6/5	28	71+0-0	60+ 0- 0	15	350.70	23.55	6.79	2.38	28.39	2.70	717.86	48.12	36.77	5.28	1018.09	111.71

GROUP 3

DATE	DAY	TEMP	HUMIDITY	N	BODY WEIGHT XBAR	BODY WEIGHT SD	CHG. BODY WT. XBAR	CHG. BODY WT. SD	FOOD CONSUMED XBAR	FOOD CONSUMED SD	FOOD CONSUMED TOTAL TO DATE	FOOD CONSUMED SD	WATER CONSUMED XBAR	WATER CONSUMED SD	WATER CONSUMED TOTAL TO DATE	WATER CONSUMED SD
12/ 5/5	0	0+0-0	0+ 0- 0	16	128.98	12.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14/ 5/5	2	72+1-1	62+ 2- 2	16	142.98	12.37	6.97	1.55	16.51	1.45	33.01	2.89	22.67	3.41	45.34	6.82
16/ 5/5	4	72+1-0	56+ 1- 1	16	159.89	12.76	8.18	1.84	19.[illegible]	2.08	72.59	6.49	28.81	2.20	102.95	9.27
19/ 5/5	7	72+1-0	57+ 1- 1	16	184.63	16.13	8.51	1.48	21.39	2.34	136.78	12.85	29.82	[illegible]57	192.48	14.82
21/ 5/5	9	73+0-0	58+ 0- 0	15	200.91	17.26	8.14	0.84	23.82	3.11	184.41	18.41	32.88	[illegible]3	256.24	18.82
23/ 5/5	11	74+0-1	63+ 0- 3	16	217.14	18.88	8.12	1.35	24.28	3.78	232.96	25.43	38.59	[illegible]6	333.43	25.48
26/ 5/5	14	75+0-3	70+10-10	16	243.45	21.62	8.77	1.38	24.59	3.[illegible]3	306.73	33.72	37.16	4.[illegible]	444.91	36.42
28/ 5/5	16	78+0-1	64+ 4- 4	16	255.63	22.81	6.89	1.32	25.13	3.12	356.99	39.36	38.15	[illegible]37	521.23	43.94
30/ 5/5	18	72+0-0	58+ 2- 0	16	269.56	24.56	6.97	1.61	25.98	3.72	409.95	46.23	41.49	4.63	684.20	51.80
2/ 6/5	21	72+1-0	61+ 1- 0	16	292.56	27.27	7.60	1.39	26.71	3.36	484.09	55.16	39.03	4.86	721.30	63.86
4/ 6/5	23	71+0-1	62+ 1- 0	16	309.05	30.46	8.25	1.94	26.86	3.06	540.81	59.90	37.60	5.30	796.51	73.00
6/ 6/5	25	66+2-0	60+ 0- 0	16	317.60	30.43	4.28	1.78	26.33	2.96	595.48	64.49	48.51	6.88	877.53	83.44
9/ 6/5	28	71+0-0	60+ 0- 0	16	338.62	34.99	7.01	1.95	27.46	3.30	677.38	72.40	37.40	5.42	989.73	97.51

TABLE A-4

EXPERIMENT F

GROUP 4

DATE	DAY	TEMP	HUMIDITY	N	BODY WEIGHT XBAR	BODY WEIGHT SD	CHG. BODY WT. XBAR	CHG. BODY WT. SD	FOOD CONSUMED XBAR	FOOD CONSUMED SD	FOOD CONSUMED TOTAL TO DATE	FOOD CONSUMED SD	WATER XBAR	WATER SD	WATER CONSUMED TOTAL TO DATE	WATER CONSUMED SD
12/ 5/5	0	0+0-0	0+ 0-	0	16	131.01	12.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14/ 5/5	2	72+1-1	62+ 2-	2	16	141.32	12.09	5.16	1.53	16.35	0.97	32.70	1.94	22.55	2.26	45.11	4.51
16/ 5/5	4	72+1-0	56+ 1-	1	16	158.34	13.77	8.51	1.26	19.81	1.57	72.33	4.75	28.78	1.98	102.68	8.06
19/ 5/5	7	72+1-0	57+ 1-	1	16	182.19	15.46	7.95	1.16	21.53	1.69	136.93	9.18	29.28	2.67	190.26	15.58
21/ 5/5	9	73+0-0	58+ 0-	0	16	198.05	17.38	7.93	1.34	23.80	1.69	182.92	11.65	32.33	3.52	254.92	21.92
23/ 5/5	11	74+0-1	63+ 0-	3	16	212.38	19.06	7.12	1.56	23.62	2.00	230.15	14.52	38.41	4.42	331.74	29.52
26/ 5/5	14	75+6-3	70+10-10	16	16	238.88	22.41	8.59	1.39	24.27	2.23	302.55	20.14	37.56	4.93	444.41	43.08
28/ 5/5	16	78+0-1	64+ 4-	4	16	251.92	23.42	6.93	1.24	24.46	2.14	351.07	24.03	30.21	5.85	520.83	53.76
30/ 5/5	18	72+0-0	56+ 2-	0	16	266.42	24.80	7.25	1.27	25.02	1.90	401.91	27.32	41.17	5.33	602.16	63.47
2/ 6/5	21	72+1-0	61+ 1-	0	16	283.48	25.00	7.11	1.01	25.56	2.11	474.57	34.81	37.79	5.35	716.53	75.60
4/ 6/5	23	71+0-1	62+ 1-	0	16	305.85	25.61	8.18	1.65	26.33	2.37	531.23	38.60	36.89	5.18	768.31	83.21
6/ 6/5	25	66+2-0	60+ 0-	0	16	316.38	25.23	5.26	1.40	26.57	1.91	584.36	39.98	41.02	5.14	872.36	91.56
9/ 6/5	28	71+0-0	60+ 0-	0	16	336.71	25.28	6.78	0.96	26.70	1.93	664.69	44.73	32.17	4.57	985.86	103.56

GROUP 5

DATE	DAY	TEMP	HUMIDITY	N	BODY WEIGHT XBAR	BODY WEIGHT SD	CHG. BODY WT. XBAR	CHG. BODY WT. SD	FOOD CONSUMED XBAR	FOOD CONSUMED SD	FOOD CONSUMED TOTAL TO DATE	FOOD CONSUMED SD	WATER XBAR	WATER SD	WATER CONSUMED TOTAL TO DATE	WATER CONSUMED SD
12/ 5/5	0	0+0-0	0+ 0-	0	16	132.58	11.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14/ 5/5	2	72+1-1	62+ 2-	2	16	146.89	11.75	6.99	2.59	17.07	1.15	34.14	2.30	22.54	1.50	45.08	3.01
16/ 5/5	4	72+1-0	56+ 1-	1	15	163.86	12.22	8.49	1.12	20.10	1.39	74.37*	4.27	28.89	1.92	101.26*	6.04
19/ 5/5	7	72+1-0	57+ 1-	1	16	188.34	14.23	8.16	1.15	21.34	1.45	138.38	8.07	28.15	1.91	185.72	11.19
21/ 5/5	9	73+0-0	58+ 0-	0	16	203.86	14.46	7.76	1.31	23.62	2.02	185.63	11.25	36.83	2.24	247.38	14.87
23/ 5/5	11	74+0-1	63+ 0-	3	16	219.10	15.92	7.62	1.46	22.85	2.15	231.33	14.80	36.78	3.65	320.79	21.07
26/ 5/5	14	75+6-3	70+10-10	16	16	245.74	18.45	8.88	1.57	24.02	2.81	303.39	20.24	35.65	3.58	427.73	30.06
28/ 5/5	16	78+0-1	64+ 4-	4	16	257.33	19.65	5.79	1.65	24.01	2.15	351.41	24.10	35.88	3.85	499.48	37.93
30/ 5/5	18	72+0-0	56+ 2-	0	16	271.52	20.28	7.09	1.06	24.42	2.46	400.35	28.54	30.04	3.73	575.50	44.71
2/ 6/5	21	72+1-0	61+ 1-	0	16	291.54	20.94	6.47	1.11	25.25	2.19	475.09	31.47	35.06	3.92	681.16	54.13
4/ 6/5	23	71+0-1	62+ 1-	0	16	306.24	21.98	7.35	1.66	25.52	2.11	527.13	38.53	33.20	3.68	749.56	57.31
6/ 6/5	25	66+2-0	60+ 0-	0	16	315.08	20.87	4.72	1.36	25.22	2.01	577.57	42.10	35.43	3.37	820.47	62.74
9/ 6/5	28	71+0-0	60+ 0-	0	16	332.43	21.85	5.58	1.35	25.40	2.01	653.77	47.07	32.50	3.04	917.32	68.0

GROUP 6

DATE	DAY	TEMP	HUMIDITY	N	BODY WEIGHT XBAR	BODY WEIGHT SD	CHG. BODY WT. XBAR	CHG. BODY WT. SD	FOOD CONSUMED XBAR	FOOD CONSUMED SD	FOOD CONSUMED TOTAL TO DATE	FOOD CONSUMED SD	WATER XBAR	WATER SD	WATER CONSUMED TOTAL TO DATE	WATER CONSUMED SD
12/ 5/5	0	0+0-0	0+ 0-	0	16	129.84	12.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14/ 5/5	2	72+1-1	62+ 2-	2	14	144.94*	11.29	7.95	3.89	17.51	1.19	35.03*	2.22	23.66	3.93	47.31*	7.32
16/ 5/5	4	72+1-0	56+ 1-	1	14	163.54*	11.35	9.30	3.74	20.97	1.54	76.97*	4.75	29.05	3.69	185.42*	13.74
19/ 5/5	7	72+1-0	57+ 1-	1	14	188.42*	11.87	8.30	3.43	22.58	1.63	141.71*	7.92	29.53	3.71	194.02*	23.20
21/ 5/5	9	73+0-0	58+ 0-	0	14	205.28*	13.07	8.43	3.51	23.82	1.66	192.35*	10.43	32.06	3.58	258.14*	29.43
23/ 5/5	11	74+0-1	63+ 0-	3	14	221.81*	14.50	7.86	3.39	24.53	1.71	241.41*	12.67	38.74	5.28	335.61*	38.36
26/ 5/5	14	75+6-3	70+10-10	14	14	248.14*	17.99	9.38	3.95	25.91	2.61	319.13*	19.13	37.95	5.81	449.46*	51.62
28/ 5/5	16	78+0-1	64+ 4-	4	14	264.25*	20.35	7.56	3.47	26.18	2.59	371.32*	23.55	38.81	5.81	527.00*	60.22
30/ 5/5	18	72+0-0	56+ 2-	0	13	279.86*	21.84	7.08	3.42	26.61	3.35	421.04*	29.14	40.93	6.45	611.20*	70.56
2/ 6/5	21	72+1-0	61+ 1-	0	14	304.88*	23.50	8.81	3.58	28.68	2.67	509.18*	36.04	40.59	5.09	775.94*	84.00
4/ 6/5	23	71+0-1	62+ 1-	0	14	310.96*	26.30	7.54	3.75	28.50	2.67	568.17*	40.63	38.95	5.97	849.65*	99.85
6/ 6/5	25	66+2-0	60+ 0-	0	14	329.69*	27.12	5.36	2.75	27.50	2.56	621.17*	41.91	41.35	6.26	892.34*	99.12
9/ 6/5	28	71+0-0	60+ 0-	0	14	349.84*	29.32	6.86	2.87	28.33	2.51	706.15*	51.20	37.69	6.47	1005.40*	114.65

TABLE A-5

EXPERIMENT G

GROUP 1

DATE	DAY	TEMP	HUMIDITY	N	BODY WEIGHT XBAR	BODY WEIGHT SD	CHG. BODY WT. XBAR	CHG. BODY WT. SD	FOOD CONSUMED XBAR	FOOD CONSUMED SD	FOOD CONSUMED TOTAL TO DATE	FOOD CONSUMED SD	WATER CONSUMED XBAR	WATER CONSUMED SD	WATER CONSUMED TOTAL TO DATE	WATER CONSUMED SD
23/ 6/3	0	0+0-0	0+ 0- 0	48	136.87	10.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25/ 6/5	2	73+0-0	63+ 0- 1	48	213.70	11.58	8.86	1.20	23.53	1.76	47.06	3.53	33.44	3.65	66.88	7.30
27/ 6/5	4	72+0-0	62+ 0- 1	48	230.05	12.68	8.14	1.20	23.87	1.85	94.80	6.93	35.21	3.83	137.30	14.52
30/ 6/5	7	72+1-0	63+ 0- 1	48	255.69	14.85	8.54	1.05	24.86	2.04	169.39	12.83	34.84	3.82	241.82	25.44
2/ 7/5	9	70+1-0	62+ 0- 0	48	273.65	15.58	9.00	1.49	26.60	2.03	222.60	16.59	37.04	3.58	315.90	31.99
3/ 7/5	10	72+1-1	62+ 2- 0	48	278.62	16.37	4.95	2.34	25.83	2.15	248.47	18.45	40.08	4.45	355.98	25.56
7/ 7/5	14	71+1-0	62+ 0- 0	48	311.28	18.05	8.16	1.12	27.27	2.47	357.56	27.41	35.00	3.97	409.59	48.92
9/ 7/5	16	72+1-0	63+ 1- 0	48	327.29	19.68	8.00	1.45	27.83	2.93	413.35	32.40	40.94	5.33	501.48	59.68
11/ 7/5	18	72+0-1	62+ 0- 0	48	336.41	21.55	4.56	1.63	27.78	3.90	468.76	38.81	41.97	5.87	665.41	69.33
14/ 7/5	21	73+0-0	63+ 1- 1	48	355.33	23.21	6.31	1.26	27.98	3.01	552.69	45.80	41.05	6.27	787.36	85.13
16/ 7/5	23	73+1-0	63+ 1- 0	48	367.55	24.77	6.11	1.57	29.02	3.00	610.74	51.04	39.01	5.36	865.39	95.12
18/ 7/5	25	74+0-1	63+ 0- 0	48	375.80	24.80	4.17	1.61	27.44	2.43	665.61	55.66	38.16	5.78	941.70	104.79
21/ 7/5	28	74+0-0	64+ 0- 0	48	390.08	27.31	5.00	1.08	28.34	2.62	750.65	61.75	37.77	5.05	1052.51	118.90

GROUP 2

DATE	DAY	TEMP	HUMIDITY	N	BODY WEIGHT XBAR	BODY WEIGHT SD	CHG. BODY WT. XBAR	CHG. BODY WT. SD	FOOD CONSUMED XBAR	FOOD CONSUMED SD	FOOD CONSUMED TOTAL TO DATE	FOOD CONSUMED SD	WATER CONSUMED XBAR	WATER CONSUMED SD	WATER CONSUMED TOTAL TO DATE	WATER CONSUMED SD
23/ 6/5	0	0+0-0	0+ 0- 0	48	194.55	9.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25/ 6/5	2	73+0-0	63+ 0- 1	47	211.13	11.57	8.29	1.55	22.72	1.92	45.44 *	3.79	32.73	3.79	65.16 *	7.29
27/ 6/5	4	72+0-0	62+ 0- 1	48	226.75	12.35	7.81	1.25	23.41	2.19	92.26	7.69	34.20	3.85	133.56	14.31
30/ 6/5	7	72+1-0	63+ 0- 1	48	251.94	13.86	8.40	1.23	24.26	2.31	165.03	14.22	35.79	3.94	234.94	25.48
2/ 7/5	9	70+1-0	62+ 0- 0	48	269.63	15.55	8.84	1.94	26.35	2.49	217.72	18.53	36.04	4.61	307.03	33.72
3/ 7/5	10	72+1-1	62+ 2- 0	48	273.43	15.94	3.80	2.75	25.03	2.44	242.80	20.50	39.01	5.13	346.04	37.86
7/ 7/5	14	71+1-0	62+ 0- 0	48	305.94	18.59	8.13	1.09	26.87	2.42	350.20	29.46	35.23	4.58	486.90	55.07
9/ 7/5	16	72+1-0	63+ 1- 0	48	322.36	20.07	8.21	1.75	27.50	2.60	405.40	34.20	40.40	5.50	567.33	65.42
11/ 7/5	18	72+0-1	62+ 0- 0	48	331.77	21.17	4.70	1.53	27.42	2.65	460.24	38.41	41.05	5.51	650.43	75.04
14/ 7/5	21	72+0-0	63+ 1- 1	47	343.80	22.42	5.63	1.48	27.61	2.80	542.50 *	44.91	39.70	5.81	771.52 *	90.61
16/ 7/5	23	73+1-0	63+ 1- 0	43	360.73	24.32	5.99	2.00	28.39	2.94	609.30	48.97	38.00	5.47	835.51	99.61
18/ 7/5	25	74+0-1	63+ 0- 0	46	369.55	24.97	4.38	1.70	27.48	2.85	654.27	53.44	37.84	5.78	921.19	110.72
21/ 7/5	28	74+0-0	64+ 0- 0	47	383.95	26.92	4.80	1.46	27.99	2.59	738.24 *	58.20	37.16	6.14	1032.73 *	126.75

TABLE A-6

EXPERIMENT N

GROUP 1

DATE	DAY	TEMP	HUMIDITY	N	BODY WEIGHT XBAR	BODY WEIGHT SD	CHG. BODY WT. XBAR	CHG. BODY WT. SD	FOOD CONSUMED XBAR	FOOD CONSUMED SD	FOOD CONSUMED TOTAL TO DATE	FOOD CONSUMED SD	WATER XBAR	WATER SD	WATER CONSUMED TOTAL TO DATE	WATER CONSUMED SD
5/ 8/5	0	0+0-0	0+ 0-	0	16	197.21	9.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6/ 8/5	1	73+0-0	64+ 0-	0	16	205.05	10.65	7.84	2.97	23.58	2.35	23.58	2.35	34.29	3.56	34.29	3.56
8/ 8/5	3	71+1-0	63+ 0-	1	16	220.42	13.15	7.68	2.23	24.33	2.33	72.24	6.54	33.88	4.78	102.85	12.49
11/ 8/5	6	72+0-0	65+ 0-	0	16	243.53	15.35	7.70	1.58	25.28	2.68	148.89	14.23	32.98	4.54	288.74	25.57
13/ 8/5	8	73+0-0	64+ 0-	0	16	262.65	18.85	9.56	1.92	25.63	2.88	199.36	19.61	34.33	5.33	269.39	35.47
15/ 8/5	10	74+0-0	67+ 0-	1	16	276.22	19.89	6.78	1.17	25.54	2.68	258.44	24.64	35.97	4.83	341.33	44.87
18/ 8/5	13	74+0-2	68+ 1-	2	16	300.48	21.74	8.06	1.39	27.05	3.02	331.59	33.41	35.48	5.05	447.52	61.75
20/ 8/5	15	71+0-0	66+ 0-	0	16	317.34	22.52	8.47	1.66	27.91	2.95	387.41	39.12	35.35	5.65	518.22	72.33
22/ 8/5	17	72+0-0	69+ 0-	1	15	328.51	22.52	5.58	1.35	27.13	2.73	441.67*	43.81	37.03	5.49	592.30*	82.61
25/ 8/5	20	72+0-0	71+ 0-	1	16	340.81	25.29	6.83	1.67	28.54	2.60	527.29	51.81	36.40	5.94	701.50	100.09
27/ 8/5	22	72+0-1	67+ 0-	0	16	362.28	25.32	6.60	1.39	28.32	2.58	583.92	56.64	36.26	6.14	774.02	111.68
29/ 8/5	24	70+1-0	66+ 0-	0	16	371.79	25.86	4.88	1.33	27.91	2.17	639.74	60.25	37.46	5.94	848.94	122.77
2/ 9/5	28	0+0-0	0+ 0-	0	16	393.69	26.62	5.47	1.89	28.87	2.46	755.23	69.81	36.67	5.17	995.62	142.37

GROUP 2

DATE	DAY	TEMP	HUMIDITY	N	BODY WEIGHT XBAR	BODY WEIGHT SD	CHG. BODY WT. XBAR	CHG. BODY WT. SD	FOOD CONSUMED XBAR	FOOD CONSUMED SD	FOOD CONSUMED TOTAL TO DATE	FOOD CONSUMED SD	WATER XBAR	WATER SD	WATER CONSUMED TOTAL TO DATE	WATER CONSUMED SD
5/ 8/5	0	0+0-0	0+ 0-	0	16	188.16	13.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6/ 8/5	1	73+0-0	64+ 0-	0	16	197.17	14.48	9.07	2.09	23.06	2.09	23.06	2.09	33.76	4.45	33.76	4.45
8/ 8/5	3	71+1-0	63+ 0-	1	16	211.74	16.29	7.20	1.29	23.88	1.89	70.81	5.67	33.84	4.27	101.44	12.57
11/ 8/5	6	72+0-0	65+ 0-	0	16	237.37	18.28	8.54	1.24	25.18	1.78	146.33	10.67	32.59	4.31	199.22	25.19
13/ 8/5	8	73+0-0	64+ 0-	0	16	255.64	20.44	9.14	1.65	25.67	2.17	197.68	14.35	32.96	4.79	265.13	34.89
15/ 8/5	10	74+0-0	67+ 0-	1	16	268.87	21.81	6.61	1.83	25.70	2.13	249.88	18.11	35.18	4.92	335.32	43.57
18/ 8/5	13	74+0-2	68+ 1-	2	16	292.52	23.16	7.89	1.31	26.86	2.25	329.64	24.79	34.58	4.82	438.84	57.32
20/ 8/5	15	71+0-0	66+ 0-	0	16	309.84	25.84	8.66	1.48	27.83	2.58	385.31	28.74	34.38	4.69	507.63	66.81
22/ 8/5	17	72+0-0	69+ 0-	1	16	324.11	25.87	7.14	1.48	27.35	3.38	440.81	33.77	36.81	5.81	579.64	76.64
25/ 8/5	20	72+0-0	71+ 0-	1	16	343.96	26.74	8.61	1.09	29.06	3.31	527.20	41.79	35.23	4.93	685.34	89.73
27/ 8/5	22	72+0-1	67+ 0-	0	16	359.81	28.11	7.52	1.35	28.58	2.25	584.36	45.68	34.19	4.67	753.73	98.13
29/ 8/5	24	70+1-0	66+ 0-	0	16	368.44	28.94	4.72	2.86	28.19	2.40	640.74	49.50	35.67	4.92	825.06	107.56
2/ 9/5	28	0+0-0	0+ 0-	0	16	392.85	31.59	5.90	1.30	29.19	2.45	757.49	58.15	35.84	4.78	968.43	124.03

GROUP 3

DATE	DAY	TEMP	HUMIDITY	N	BODY WEIGHT XBAR	BODY WEIGHT SD	CHG. BODY WT. XBAR	CHG. BODY WT. SD	FOOD CONSUMED XBAR	FOOD CONSUMED SD	FOOD CONSUMED TOTAL TO DATE	FOOD CONSUMED SD	WATER XBAR	WATER SD	WATER CONSUMED TOTAL TO DATE	WATER CONSUMED SD
5/ 8/5	0	0+0-0	0+ 0-	0	16	192.44	9.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6/ 8/5	1	73+0-0	64+ 0-	0	16	200.21	11.04	7.77	2.91	23.04	2.09	23.04	2.09	34.18	5.15	34.18	5.15
8/ 8/5	3	71+1-0	63+ 0-	1	16	216.59	11.69	8.19	1.51	24.69	1.65	72.43	5.09	34.57	4.44	103.31	13.68
11/ 8/5	6	72+0-0	65+ 0-	0	16	243.94	14.28	9.12	1.35	25.72	1.64	149.58	9.65	34.34	3.88	206.34	24.99
13/ 8/5	8	73+0-0	64+ 0-	0	16	261.67	16.54	8.87	1.71	26.22	1.95	202.03	13.42	35.68	4.27	277.71	32.04
15/ 8/5	10	74+0-0	67+ 0-	1	16	276.44	19.32	7.38	1.85	25.93	2.15	253.89	17.41	36.35	3.68	358.41	38.73
18/ 8/5	13	74+0-2	68+ 1-	2	16	302.32	21.86	8.63	1.23	27.98	2.29	337.58	21.73	36.31	4.28	459.34	50.62
20/ 8/5	15	71+0-0	66+ 0-	0	16	320.33	23.78	9.01	2.17	28.19	2.46	393.97	25.90	36.47	4.45	532.28	59.11
22/ 8/5	17	72+0-0	69+ 0-	1	16	333.37	24.39	6.52	1.46	28.53	2.22	451.82	30.17	39.79	4.78	611.87	69.23
25/ 8/5	20	72+0-0	71+ 0-	1	16	353.78	27.05	6.80	1.49	29.45	2.70	539.38	37.36	37.10	4.42	723.18	79.47
27/ 8/5	22	72+0-1	67+ 0-	0	16	369.41	29.37	7.82	2.03	29.32	2.83	598.01	42.41	37.27	4.54	797.71	88.03
29/ 8/5	24	70+1-0	66+ 0-	0	15	377.27	31.52	3.93	1.96	28.76	2.28	655.53*	46.16	38.37	5.48	875.60*	97.52
2/ 9/5	28	0+0-0	0+ 0-	0	16	398.50	34.21	5.31	1.56	29.11	2.73	771.96	55.17	37.92	5.75	1026.68	115.92

TABLE A-7

EXPERIMENT H

GROUP 4

DATE	DAY	TEMP	HUMIDITY	N	BODY WEIGHT XBAR	BODY WEIGHT SD	CHG. BODY WT. XBAR	CHG. BODY WT. SD	FOOD CONSUMED XBAR	FOOD CONSUMED SD	FOOD CONSUMED TOTAL TO DATE	FOOD CONSUMED SD	WATER CONSUMED XBAR	WATER CONSUMED SD	WATER CONSUMED TOTAL TO DATE	WATER CONSUMED SD
5/ 8/5	0	0+0-0	0+ 0- 0	16	188.35	11.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6/ 8/5	1	73+0-0	64+ 0- 0	16	196.34	11.47	7.99	2.42	21.88	1.88	21.88	1.88	31.51	3.06	31.51	3.06
8/ 8/5	3	71+1-0	63+ 0- 1	16	210.63	12.67	7.14	1.02	23.51	1.98	68.98	5.73	32.45	3.16	96.48	9.00
11/ 8/5	6	72+0-0	65+ 0- 0	16	235.61	14.38	8.33	1.38	24.53	1.75	142.49	10.62	31.99	3.49	192.38	18.98
13/ 8/5	8	73+0-0	64+ 0- 0	16	252.63	15.86	8.51	1.38	24.83	1.55	192.16	13.33	32.98	3.37	250.35	25.43
15/ 8/5	10	74+0-0	67+ 0- 1	16	264.25	15.99	5.81	1.50	24.65	1.67	241.46	16.29	33.20	3.31	324.74	31.64
18/ 8/5	13	74+0-2	68+ 1- 2	16	287.48	17.56	7.74	1.48	25.92	1.84	319.24	21.81	33.69	3.42	425.83	40.99
20/ 8/5	15	71+0-0	66+ 0- 0	16	303.99	19.74	8.25	2.06	26.28	2.03	371.79	24.62	33.98	3.93	493.63	48.18
22/ 8/5	17	72+0-0	69+ 0- 1	16	313.81	19.58	4.51	1.98	27.17	3.98	426.12	31.27	35.12	3.67	563.88	54.47
25/ 8/5	20	72+0-0	71+ 0- 1	16	332.91	23.53	6.63	2.08	26.96	2.28	507.01	37.24	34.70	4.53	668.32	66.63
27/ 8/5	22	72+0-1	67+ 0- 0	16	346.43	24.91	6.76	1.42	27.15	2.01	561.32	40.77	33.62	3.92	735.46	73.64
29/ 8/5	24	70+1-0	66+ 0- 0	15	353.68	26.23	3.62	1.67	27.17	2.07	615.65	42.76	35.43	4.21	805.14	78.38
2/ 9/5	28	0+0-0	0+ 0- 0	16	372.68	28.98	4.75	1.38	27.19	2.19	724.12	50.05	34.20	3.59	941.94	90.83

GROUP 5

DATE	DAY	TEMP	HUMIDITY	N	BODY WEIGHT XBAR	BODY WEIGHT SD	CHG. BODY WT. XBAR	CHG. BODY WT. SD	FOOD CONSUMED XBAR	FOOD CONSUMED SD	FOOD CONSUMED TOTAL TO DATE	FOOD CONSUMED SD	WATER CONSUMED XBAR	WATER CONSUMED SD	WATER CONSUMED TOTAL TO DATE	WATER CONSUMED SD
5/ 8/5	0	0+0-0	0+ 0- 0	16	192.81	12.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6/ 8/5	1	73+0-0	64+ 0- 0	16	198.67	12.56	6.66	2.03	23.88	3.43	23.88	3.43	33.54	3.40	33.54	3.40
8/ 8/5	3	71+1-0	63+ 0- 1	16	214.36	13.24	7.84	1.31	24.21	1.66	72.29	5.12	34.26	2.98	102.87	8.91
11/ 8/5	6	72+0-0	65+ 0- 0	16	240.99	14.66	8.88	0.95	25.76	2.09	149.56	10.69	34.14	3.12	204.48	17.50
13/ 8/5	8	73+0-0	64+ 0- 0	16	259.17	15.96	9.09	1.57	26.73	3.44	203.02	17.13	35.94	4.50	276.36	25.63
15/ 8/5	10	74+0-0	67+ 0- 1	15	271.88	16.40	5.96	1.44	25.89	1.91	254.81	19.60	35.38	4.85	346.68	34.39
18/ 8/5	13	74+0-2	68+ 1- 2	16	295.93	17.18	8.29	1.20	27.53	2.88	337.41	27.42	35.75	5.32	453.93	49.21
20/ 8/5	15	71+0-0	66+ 0- 0	16	311.58	17.65	7.82	1.23	27.68	2.54	393.36	31.78	35.27	6.18	524.47	61.17
22/ 8/5	17	72+0-0	69+ 0- 1	16	323.27	17.95	5.85	1.72	27.47	2.34	443.31	35.17	38.12	5.70	600.70	71.71
25/ 8/5	20	72+0-0	71+ 0- 1	16	343.39	18.07	6.71	1.78	29.30	3.51	536.19	45.12	36.78	6.68	711.07	91.07
27/ 8/5	22	72+0-1	67+ 0- 0	16	359.13	19.27	7.87	2.07	30.19	4.50	596.57	53.29	36.50	4.95	784.04	100.67
29/ 8/5	24	70+1-0	66+ 0- 0	15	367.14	20.05	4.00	1.27	28.04	2.05	652.65	55.28	38.21	6.40	860.12	112.75
2/ 9/5	28	0+0-0	0+ 0- 0	15	388.13	21.28	5.25	1.07	28.41	2.27	766.29	61.14	36.32	5.68	1005.03	134.42

GROUP 6

DATE	DAY	TEMP	HUMIDITY	N	BODY WEIGHT XBAR	BODY WEIGHT SD	CHG. BODY WT. XBAR	CHG. BODY WT. SD	FOOD CONSUMED XBAR	FOOD CONSUMED SD	FOOD CONSUMED TOTAL TO DATE	FOOD CONSUMED SD	WATER CONSUMED XBAR	WATER CONSUMED SD	WATER CONSUMED TOTAL TO DATE	WATER CONSUMED SD
5/ 8/5	0	0+0-0	0+ 0- 0	16	192.32	9.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6/ 8/5	1	73+0-0	64+ 0- 0	16	199.56	10.28	7.24	2.08	23.24	2.51	23.24	2.51	32.54	3.68	32.54	3.68
8/ 8/5	3	71+1-0	63+ 0- 1	16	215.02	10.98	7.73	1.39	26.37	6.48	75.98	14.26	33.03	4.16	98.61	11.75
11/ 8/5	6	72+0-0	65+ 0- 0	16	241.56	13.05	8.05	1.13	25.84	5.65	153.49	29.07	31.99	4.41	194.56	24.69
13/ 8/5	8	73+0-0	64+ 0- 0	16	259.19	15.13	8.82	1.31	25.49	3.58	204.47	35.37	33.93	4.96	262.42	34.29
15/ 8/5	10	74+0-0	67+ 0- 1	16	271.41	15.58	6.11	1.71	26.43	2.63	257.32	39.57	34.81	4.75	332.03	42.95
18/ 8/5	13	74+0-2	68+ 1- 2	15	295.49	17.11	8.02	9.96	27.36	4.64	339.27	53.02	35.87	5.48	437.24	57.53
20/ 8/5	15	71+0-0	66+ 0- 0	16	312.72	18.98	8.62	1.71	27.40	4.09	394.22	59.79	33.08	6.18	503.41	67.88
22/ 8/5	17	72+0-0	69+ 0- 1	16	324.45	19.10	5.87	1.85	27.79	2.41	449.80	62.89	37.03	5.64	577.47	78.46
25/ 8/5	20	72+0-0	71+ 0- 1	16	346.10	20.72	7.22	1.30	29.26	4.23	537.58	75.18	36.34	5.70	686.49	94.69
27/ 8/5	22	72+0-1	67+ 0- 0	16	359.74	22.54	6.82	1.73	30.05	7.40	599.48	83.19	35.87	4.65	758.22	108.19
29/ 8/5	24	70+1-0	66+ 0- 0	16	368.43	22.76	4.34	1.67	28.50	3.31	656.47	94.39	36.95	4.48	832.12	111.50
2/ 9/5	28	0+0-0	0+ 0- 0	15	390.37	25.39	5.49	1.31	28.20	3.14	769.64	97.86	36.37	6.03	977.25	137.91

APPENDIX B

Data and Statistical Summary of the Biochemical and Hematological Analyses

Tables B-1 through B-11 present the raw data and a statistical summary for the biochemical and hematological analyses for each experimental group of the four experiments (E, F, G, and H). The average per day growth rate over the 28-day exposure period and the final weight are presented for convenience. The field strength and chamber position (either upper or lower) for any group can be obtained from Table 2 of the text.

Note that in experiment F, animals numbered 231 (Table B-4), 687, and 689 (Table B-6) were deleted from the growth analyses as discussed in Appendix A. A 999.0 was used in the final weight (FNL WT) column and a 000.0 was used in the growth rate column (WT/DAY) to identify the deleted animals. When a 0.0 is encountered in the rest of these tables, it indicates that the biochemical and hematological determinations were not performed. This only occurred as a result of an insufficient quantity or a clotted sample.

Histograms of these data indicate that nonparametric techniques should be used for their analysis. However, the first quartile (Q-1), median (MED), third quartile (Q-3), the number of animals (N), the average (AVG), standard deviation (S.D.), and standard error (S.E.) are presented for the statistical summary.

The headings for each column are defined (proceeding from left to right) as:

ID#	three-digit code randomly assigned to each animal of an experiment. The digits for units and tens specify where each of the 96 animals was positioned. The digit for hundreds specifies the chamber number (1-6)
T.P.	total serum or plasma protein (g/dl)
GLOB	serum or plasma globulin (mg/dl)
GLU	serum or plasma glucose (mg/dl)

T. L.	serum or plasma total lipids (mg/dl)
CHOL	serum or plasma cholesterol (mg/dl)
TRIG	serum or plasma triglycerides (mg/dl)
WT/DAY	(final body mass-initial body mass)/28 (g/day)
FNL WT	final body mass (g)
RBC	red blood cells (cells/mm^3 x 10^6)
WBC	white blood cells (cells/mm^3 x 10^3)
POLY	segment neutrophils (%)
LYHS	lymphocytes (%)
HCT	hematocrit (%)
HGB	hemoglobin (g/dl)

Table B-1

EXPERIMENT E GROUP 1

ID#	T.P.	GLOB	GLU	T.L.	CHOL	TRIG	WT/DAY	FNL WT	RBC	WBC	POLY	LYMS	HCT	HGB
101	5.720	1.840	322.0	465.0	80.0	187.0	4.900	338.0	6.010	9450.0	6.0	94.0	48.0	14.9
102	3.910	1.880	286.0	404.0	110.0	183.0	6.000	402.0	7.140	6390.0	6.0	93.0	52.0	16.3
103	6.910	2.540	211.0	375.0	138.0	218.0	7.000	431.0	5.900	5230.0	4.0	96.0	47.0	15.4
104	5.700	2.150	254.0	448.0	106.0	202.0	6.100	394.0	0.000	0.0	0.0	0.0	0.0	0.0
105	5.890	2.020	220.0	280.0	104.0	193.0	7.500	421.0	5.960	8100.0	4.0	95.0	47.0	15.2
106	6.210	2.110	439.0	372.0	108.0	235.0	7.000	418.0	5.990	2450.0	6.0	94.0	47.0	15.6
107	5.470	1.980	196.0	330.0	103.0	169.0	6.900	427.0	5.198	5470.0	6.0	94.0	44.0	14.3
108	5.980	2.150	309.0	428.0	123.0	202.0	6.600	398.0	6.390	6690.0	6.0	93.0	52.0	16.8
109	5.310	1.810	468.0	308.0	86.0	126.0	6.600	413.0	5.590	5580.0	7.0	91.0	44.0	14.4
110	5.790	1.930	220.0	447.0	88.0	142.0	5.900	399.0	5.620	5100.0	15.0	83.0	47.0	14.8
111	5.910	1.990	220.0	488.0	49.0	143.0	4.500	332.0	6.038	9560.0	9.0	88.0	48.0	15.5
112	5.470	1.840	194.0	548.0	57.0	125.0	5.500	358.0	6.810	6110.0	11.0	86.0	48.0	16.0
113	5.390	1.870	292.0	498.0	81.0	237.0	7.000	405.0	5.50	1080.0	4.0	94.0	47.0	15.4
114	5.706	1.840	349.0	395.0	64.0	147.0	6.300	402.0	5.78	7610.0	13.0	84.0	45.0	15.0
115	5.630	2.120	284.0	480.0	70.0	119.0	6.600	419.0	6.100	6070.0	6.0	92.0	48.0	15.2
116	7.230	2.620	314.0	380.0	65.0	183.0	6.400	419.0	6.250	1085.0	11.0	88.0	50.0	17.2
Q-1	5.470	1.855	215.5	377.5	67.5	144.5	5.950	396.0	5.650	5100.0	6.0	88.0	47.0	14.9
MED	5.710	1.960	269.0	4[illegible].0	87.0	1[illegible]	6.500	403.5	5.990	6070.0	6.0	93.0	47.0	15.4
Q-3	5.945	2.135	318.0	47[illegible]	107.0	2[illegible]	6.950	419.0	6.180	7610.0	11.0	94.0	48.0	16.0
N	16.000	16.000	16.0	1[illegible]	16.0	[illegible].0	16.000	16.0	15.000	15.0	15.0	15.0	15.0	15.0
AVG	5.764	2.030	281.1	415	89.5	176.0	6.300	398.5	5.991	5731.7	7.6	91.0	47.6	15.5
S D	0.718	0.243	83.0	73.5	25.0	38.3	0.803	29.1	0.425	2590.8	3.4	4.2	2.4	0.8
S E	0.179	0.061	21.0	18.4	6.3	9.6	0.201	7.5	0.112	668.9	0.9	1.1	0.6	0.2

EXPERIMENT E GROUP 2

ID#	T.P.	GLOB	GLU	T.L.	CHOL	TRIG	WT/DAY	FNL WT	RBC	WBC	POLY	LYMS	HCT	HGB
217	5.620	2.080	325.0	553.0	94.0	108.0	6.400	391.0	5.910	5120.0	18.0	82.0	43.0	14.6
218	5.880	1.860	234.0	437.0	69.0	68.0	5.500	381.0	5.650	9060.0	8.0	91.0	42.0	13.8
219	5.980	1.480	188.0	545.0	83.0	108.0	6.680	401.0	5.690	4760.0	12.0	85.0	44.0	14.2
220	7.110	2.470	153.0	476.0	92.0	171.0	6.400	412.0	5.960	7790.0	3.0	97.0	45.0	14.8
221	5.150	1.620	373.0	504.0	80.0	169.0	6.600	426.0	5.850	9390.0	8.0	91.0	45.0	15.2
222	5.630	1.920	157.0	521.0	85.0	218.0	6.800	397.0	5.680	8520.0	9.0	87.0	45.0	15.0
223	5.980	1.950	94.0	432.0	65.0	192.0	6.300	378.0	5.740	4760.0	5.0	92.0	43.0	14.8
224	7.890	2.450	148.0	284.0	65.0	196.0	6.100	358.0	4.870	6280.0	10.0	89.0	35.0	12.8
225	5.880	1.950	143.0	482.0	53.0	325.0	6.300	394.0	5.720	4440.0	8.0	92.0	43.0	14.2
226	5.890	1.890	140.0	496.0	80.0	169.0	6.700	405.0	6.040	7260.0	7.0	91.0	45.0	15.0
227	5.520	1.810	166.0	607.0	63.0	202.0	6.500	399.0	5.650	5650.0	10.0	90.0	44.0	14.7
228	4.760	1.590	143.0	402.0	88.0	125.0	6.200	406.0	6.040	5490.0	10.0	89.0	45.0	14.9
229	5.630	1.980	138.0	490.0	69.0	135.0	6.100	386.0	6.100	7630.0	7.0	91.0	47.0	15.6
230	5.910	1.800	118.0	443.0	63.0	140.0	7.400	442.0	5.940	4120.0	14.0	85.0	44.0	14.4
231	5.960	1.860	138.0	522.0	65.0	117.0	6.200	376.0	6.400	3800.0	9.0	90.0	48.0	16.3
232	5.570	1.840	162.0	409.0	55.0	229.0	6.600	404.0	6.260	8400.0	6.0	93.0	46.0	15.2
Q-1	5.595	1.805	139.0	420.5	64.0	121.0	6.200	383.5	5.705	4760.0	7.0	88.0	43.0	14.2
MED	5.940	1.875	150.5	483.0	69.0	169.0	6.400	398.0	5.860	5965.0	8.5	90.5	44.5	14.8
Q-3	5.970	1.950	177.0	521.5	84.0	199.0	6.600	405.5	6.040	8095.0	10.0	91.5	45.0	15.1
N	16.000	16.000	16.0	16.0	16.0	16.0	16.000	16.0	16.000	16.0	16.0	16.0	16.0	16.0
AVG	5.843	1.904	176.3	470.2	73.1	166.5	6.419	397.3	5.861	6398.8	9.6	89.7	44.0	14.6
S D	0.588	0.263	74.4	77.3	13.0	62.1	0.405	20.1	0.342	1881.3	3.6	3.6	2.9	0.9
S E	0.147	0.066	18.6	19.3	3.2	15.5	0.101	5.0	0.086	470.3	0.9	0.9	0.7	0.2

Table B-2

EXPERIMENT E GROUP 3

ID#	T.P.	GLOB	GLU	T.L.	CHOL	TRIG	WT/DAY	FNL WT	RBC	WBC	POLY	LYMS	HCT	HGB
333	5.900	1.990	377.0	390.0	47.0	139.0	6.400	384.0	0.000	0.0	0.0	0.0	0.0	0.0
334	5.800	1.960	388.0	450.0	51.0	110.0	6.200	375.0	5.790	6790.0	9.0	91.0	43.0	12.9
335	5.800	2.060	187.0	545.0	64.0	98.0	6.300	396.0	6.260	5870.0	7.0	93.0	45.0	14.6
336	5.480	1.770	497.0	541.0	113.0	110.0	5.400	351.0	6.690	3860.0	4.0	95.0	44.0	14.2
337	7.230	2.620	454.0	533.0	136.0	93.0	7.300	431.0	6.400	7990.0	5.0	95.0	50.0	17.6
338	6.800	2.210	224.0	383.0	87.0	98.0	6.200	385.0	6.560	4360.0	8.0	92.0	50.0	16.9
339	7.580	2.820	316.0	489.0	69.0	179.0	6.800	389.0	6.550	8060.0	12.0	87.0	51.0	17.8
340	7.140	2.350	156.0	342.0	58.0	149.0	6.100	400.0	6.930	7990.0	4.0	94.0	50.0	16.8
341	5.480	1.920	184.0	395.0	62.0	228.0	6.420	390.0	6.030	1050.0	9.0	90.0	45.0	15.0
342	6.860	2.090	112.0	424.0	60.0	187.0	6.200	389.0	6.980	8880.0	2.0	96.0	48.0	15.6
343	6.260	2.080	176.0	428.0	123.0	154.0	6.300	397.0	7.126	2840.0	14.0	87.0	47.0	15.4
344	5.470	1.750	193.0	486.0	65.0	178.0	5.400	359.0	6.550	3860.0	7.0	91.0	45.0	14.8
345	5.240	1.560	90.0	460.0	138.0	70.0	6.300	400.0	6.470	6440.0	3.0	96.0	43.0	13.9
346	5.470	1.960	291.0	493.0	70.0	207.0	6.600	401.0	6.600	5410.0	11.0	89.0	42.0	14.2
347	5.880	2.070	168.0	445.0	106.0	127.0	5.200	343.0	7.100	7770.0	25.0	74.0	45.0	14.8
348	7.480	2.690	418.0	501.0	64.0	94.0	5.100	362.0	6.940	4730.0	11.0	88.0	44.0	14.0
Q-1	5.475	1.940	172.0	402.0	61.0	90.0	5.700	368.5	6.470	3860.0	4.0	88.0	44.0	14.2
MED	5.930	2.065	208.5	447.5	67.0	133.0	6.200	389.0	6.600	5410.0	8.0	91.0	45.0	14.8
Q-3	6.700	2.280	346.5	497.0	109.5	178.5	6.400	398.5	6.940	7990.0	11.0	95.0	50.0	16.8
N	16.000	16.000	16.0	16.0	16.0	16.0	16.000	16.0	15.000	15.0	15.0	15.0	15.0	15.0
AVG	6.142	2.119	259.4	451.6	82.1	138.0	6.100	385.0	6.651	5628.0	8.7	90.5	46.1	15.2
S.D.	0.779	0.348	124.6	68.9	38.8	46.5	0.574	22.6	0.353	2321.8	5.7	5.5	3.0	1.4
S.E.	0.195	0.087	31.2	15.2	7.7	11.6	0.143	5.7	0.091	599.5	1.5	1.4	0.8	0.4

EXPERIMENT E GROUP 4

ID#	T.P.	GLOB	GLU	T.L.	CHOL	TRIG	WT/DAY	FNL WT	RBC	WBC	POLY	LYMS	HCT	HGB
449	5.430	1.830	342.0	486.0	94.0	144.0	6.300	404.0	6.360	5980.0	11.0	89.0	50.0	17.2
450	5.980	1.720	215.0	471.0	94.0	202.0	7.400	407.0	6.380	8040.0	18.0	81.0	50.0	17.0
451	5.310	1.800	256.0	276.0	55.0	146.0	5.200	355.0	0.000	0.0	0.0	0.0	0.0	0.0
452	5.430	1.690	269.0	432.0	88.0	154.0	5.700	369.0	6.490	4590.0	7.0	93.0	50.0	16.9
453	6.480	2.270	159.0	552.0	133.0	134.0	6.500	416.0	6.450	5670.0	8.0	90.0	48.0	15.6
454	7.770	2.910	586.0	574.0	88.0	116.0	6.600	403.0	6.640	7120.0	6.0	93.0	45.0	15.4
455	5.740	1.750	119.0	422.0	80.0	178.0	6.900	402.0	6.910	7480.0	4.0	94.0	45.0	15.2
456	6.260	2.180	127.0	504.0	116.0	165.0	7.800	459.0	6.670	6690.0	4.0	96.0	45.0	15.2
457	6.170	2.320	179.0	488.0	104.0	102.0	5.900	372.0	6.720	5330.0	15.0	83.0	46.0	15.0
458	5.980	2.240	161.0	339.0	81.0	139.0	5.700	376.0	7.070	8780.0	13.0	86.0	46.0	15.4
459	5.890	2.060	257.0	478.0	108.0	162.0	5.600	367.0	6.990	6920.0	10.0	88.0	46.0	15.0
460	5.980	2.280	263.0	445.0	57.0	104.0	6.300	404.0	6.890	3210.0	10.0	89.0	45.0	15.2
461	6.250	2.210	149.0	493.0	103.0	96.0	6.800	378.0	6.100	5120.0	6.0	94.0	46.0	15.6
462	6.130	2.280	149.0	378.0	88.0	121.0	6.900	411.0	6.210	8370.0	23.0	76.0	47.0	15.4
463	5.890	2.240	203.0	467.0	123.0	141.0	6.800	402.0	5.900	7700.0	5.0	92.0	45.0	14.7
464	5.790	2.110	189.0	257.0	80.0	140.0	7.400	409.0	6.810	8770.0	4.0	96.0	45.0	14.2
Q-1	5.765	1.815	154.0	392.0	80.5	118.5	5.800	374.0	6.100	5330.0	5.0	83.0	45.0	15.0
MED	5.980	2.195	196.0	456.0	91.0	140.5	6.300	402.5	6.450	6920.0	8.0	90.0	46.0	15.4
Q-3	6.210	2.275	260.0	486.5	106.0	158.0	6.850	408.0	6.720	8040.0	15.0	94.0	47.0	15.6
N	16.000	16.000	16.0	16.0	16.0	16.0	16.000	16.0	15.000	15.0	15.0	15.0	15.0	15.0
AVG	6.030	2.118	218.9	435.9	93.3	140.3	6.381	395.9	6.466	6640.0	10.1	88.0	46.1	15.5
S.D.	0.565	0.311	100.0	88.6	21.2	28.6	0.733	25.4	0.365	1635.6	6.0	6.3	2.5	0.9
S.E.	0.141	0.078	25.0	22.2	5.3	7.2	0.183	6.4	0.094	422.3	1.6	1.6	0.7	0.2

Table B-3

EXPERIMENT E GROUP 5

ID#	T.P.	GLOB	GLU	T.L.	CHOL	TRIG	WT/DAY	FNL WT	RBC	WBC	POLY	LYMS	HCT	HGB
565	6.360	2.380	104.0	486.0	55.0	174.0	7.000	420.0	6.650	7760.0	9.0	90.0	48.0	15.5
566	5.910	2.020	224.0	342.0	94.0	146.0	6.500	392.0	6.300	7010.0	5.0	92.0	46.0	15.0
567	5.890	1.850	210.0	476.0	65.0	169.0	5.900	377.0	6.430	4870.0	5.0	94.0	47.0	15.4
568	6.130	2.100	145.0	402.0	69.0	203.0	6.000	380.0	6.690	7630.0	4.0	95.0	48.0	15.6
569	6.690	2.250	409.0	456.0	63.0	188.0	6.400	416.0	7.670	6360.0	10.0	87.0	53.0	17.8
570	5.950	2.130	125.0	432.0	83.0	175.0	6.000	395.0	7.160	3450.0	3.0	96.0	50.0	17.2
571	7.230	2.620	325.0	450.0	69.0	189.0	6.600	395.0	7.920	3890.0	3.0	98.0	53.0	17.5
572	5.400	2.960	234.0	462.0	92.0	184.0	7.000	415.0	7.730	8600.0	2.0	95.0	49.0	16.9
573	5.890	2.060	241.0	439.0	136.0	123.0	7.000	469.0	7.020	5200.0	10.0	89.0	48.0	15.8
574	5.530	2.020	420.0	443.0	116.0	178.0	8.300	465.0	7.310	3480.0	3.0	94.0	47.0	16.0
575	5.570	1.900	206.0	370.0	88.0	97.0	6.900	407.0	6.630	2920.0	15.0	83.0	43.0	13.9
576	5.430	1.860	375.0	284.0	113.0	164.0	5.300	350.0	6.510	4810.0	7.0	91.0	44.0	14.4
577	5.500	1.970	238.0	284.0	65.0	213.0	6.700	406.0	6.440	8120.0	7.0	91.0	45.0	14.8
578	5.840	1.980	377.0	116.0	94.0	161.0	6.200	358.0	7.300	6890.0	7.0	89.0	48.0	16.2
579	5.800	2.390	200.0	315.0	58.0	134.0	5.400	359.0	7.030	7950.0	2.0	97.0	47.0	15.0
580	6.360	2.150	743.0	542.0	88.0	145.0	7.000	404.0	6.470	7240.0	9.0	90.0	45.0	14.8
Q-1	5.550	1.975	203.0	328.5	65.0	128.5	6.000	378.5	6.490	4350.0	3.5	89.5	45.5	14.9
MED	5.865	2.060	236.0	435.5	85.5	162.5	6.550	399.5	6.855	6625.0	7.0	91.0	47.5	15.7
Q-3	6.245	2.280	376.0	459.0	94.0	176.5	7.000	412.0	7.305	7695.0	9.0	94.5	48.5	16.6
N	16.000	16.000	16.0	16.0	16.0	16.0	16.000	16.0	16.000	16.0	16.0	16.0	16.0	16.0
AVG	5.962	2.109	286.0	393.7	84.3	155.2	6.513	396.8	6.954	6811.3	6.8	91.4	47.6	15.8
S D	0.497	0.211	156.9	105.1	23.1	34.7	0.733	28.4	0.518	1919.1	3.5	3.7	2.8	1.1
S.E.	0.124	0.053	39.2	26.3	5.8	8.7	0.183	7.1	0.130	479.8	0.9	0.9	0.7	0.3

EXPERIMENT E GROUP 6

ID#	T.P.	GLOB	GLU	T.L	CHOL	TRIG	WT/DAY	FNL WT	RBC	WBC	POLY	LYMS	HCT	HGB
681	5.720	2.980	230.0	464.0	88.0	136.0	8.000	466.0	6.800	6050.0	6.0	93.0	48.0	16.5
682	6.080	2.320	254.0	464.0	80.0	114.0	6.800	424.0	6.470	5960.0	8.0	90.0	46.0	16.0
683	6.250	2.370	180.0	402.0	63.0	154.0	6.300	397.0	7.590	9470.0	10.0	90.0	49.0	16.7
684	4.480	1.370	217.0	333.0	85.0	143.0	6.600	417.0	6.460	3810.0	9.0	90.0	45.0	15.2
685	6.690	2.310	245.0	443.0	80.0	103.0	5.700	380.0	6.630	4810.0	6.0	94.0	47.0	15.6
686	5.680	2.050	153.0	381.0	65.0	136.0	5.800	351.0	7.120	5680.0	2.0	98.0	48.0	15.9
687	6.260	2.150	269.0	395.0	54.0	153.0	6.000	387.0	7.160	2840.0	12.0	87.0	50.0	16.8
688	5.630	2.050	239.0	321.0	71.0	85.0	8.000	478.0	6.400	9100.0	10.0	88.0	45.0	15.0
689	5.570	1.900	168.0	441.0	92.0	154.0	6.200	394.0	6.960	3940.0	8.0	92.0	47.0	14.6
690	5.390	1.870	292.0	383.0	69.0	146.0	6.300	384.0	6.680	5900.0	8.0	89.0	48.0	16.0
691	5.740	2.020	199.0	388.0	133.0	143.0	5.900	373.0	6.580	5450.0	10.0	89.0	46.0	15.2
692	5.630	1.980	352.0	291.0	47.0	134.0	4.500	333.0	6.210	4390.0	16.0	84.0	43.0	14.4
693	5.570	1.930	230.0	333.0	57.0	133.0	6.700	400.0	6.420	4290.0	11.0	88.0	45.0	14.8
694	5.630	1.740	229.0	372.0	63.0	148.0	5.600	368.0	6.210	3790.0	8.0	92.0	43.0	13.9
695	7.690	2.840	284.0	354.0	116.0	147.0	6.200	353.0	6.850	4460.0	20.0	80.0	47.0	15.8
696	5.740	1.870	241.0	354.0	94.0	145.0	7.600	437.0	6.660	7720.0	6.0	93.0	48.0	15.8
Q-1	5.585	1.885	208.0	333.0	63.0	133.5	5.850	366.5	6.440	4115.0	7.0	88.0	45.0	14.9
MED	5.675	2.035	234.5	377.5	75.5	143.0	6.250	388.5	6.645	5130.0	8.5	90.0	47.0	15.7
Q-3	6.165	2.230	257.0	421.5	98.0	147.5	6.750	420.5	6.905	6885.0	10.5	92.5	48.0	16.0
N	16.000	16.000	16.0	16.0	16.0	16.0	16.000	16.0	16.000	16.0	16.0	16.0	16.0	16.0
AVG	5.849	2.053	235.8	377.4	78.6	135.9	6.438	395.9	6.700	5478.8	9.4	89.8	46.6	15.5
S D	0.692	0.321	49.3	55.4	22.8	19.4	1.021	40.6	0.371	1895.5	4.2	4.2	2.0	0.8
S E	0.173	0.080	12.3	13.8	5.7	4.9	0.255	10.1	0.093	473.9	1.0	1.0	0.5	0.2

Table B-4

EXPERIMENT F GROUP 1

ID#	T.P.	GLOB	GLU	T.L.	CHOL	TRIG	WT/DAY	FNL WT	RBC	WBC	POLY	LYMS	HCT	HGB
101	5.650	2.110	158.0	460.0	67.0	55.0	8.400	361.0	5.540	2550.0	20.0	77.0	40.0	13.6
102	6.500	2.210	0.0	507.0	61.0	0.0	7.100	338.0	0.000	0.0	0.0	0.0	0.0	0.0
103	5.500	2.020	106.0	458.0	77.0	100.0	8.600	355.0	0.000	0.0	0.0	0.0	0.0	0.0
104	6.670	2.700	322.0	511.0	61.0	260.0	8.400	364.0	5.880	5240.0	10.0	90.0	48.0	13.2
105	6.210	2.120	375.0	568.0	53.0	238.0	7.600	351.0	0.000	0.0	0.0	0.0	0.0	0.0
106	8.000	2.060	346.0	0.0	68.0	96.0	9.700	414.0	6.480	8770.0	3.0	97.0	47.0	15.7
107	6.740	2.250	622.0	883.0	92.0	222.0	9.000	370.0	6.500	9630.0	12.0	87.0	48.0	15.9
108	5.550	2.080	298.0	464.0	72.0	125.0	8.800	378.0	6.400	7590.0	3.0	95.0	38.0	12.2
109	5.750	2.160	0.0	533.0	66.0	103.0	9.200	392.0	6.590	6630.0	6.0	91.0	44.0	14.1
110	6.280	2.120	293.0	549.0	82.0	146.0	8.100	356.0	7.500	5910.0	2.0	96.0	58.0	17.6
111	6.130	1.990	239.0	541.0	78.0	205.0	8.100	338.0	6.680	6080.0	12.0	86.0	43.0	14.4
112	4.990	1.820	257.0	378.0	106.0	151.0	7.000	310.0	5.600	6617.0	1.0	98.0	37.0	12.0
113	6.290	2.160	266.0	472.0	74.0	160.0	7.700	357.0	0.000	0.0	0.0	0.0	0.0	0.0
114	0.000	2.060	334.0	0.0	68.0	152.0	7.500	330.0	6.620	1550.0	12.0	87.0	45.0	15.0
115	4.390	2.090	233.0	434.0	59.0	176.0	7.900	336.0	6.680	8730.0	10.0	89.0	42.0	13.9
116	5.680	1.980	279.0	502.0	85.0	93.0	8.700	379.0	5.260	7760.0	2.0	97.0	36.0	12.4
Q-1	5.550	2.040	257.0	460.0	63.5	100.0	7.650	330.0	5.740	5575.0	2.5	87.0	39.0	12.8
MED	5.940	2.100	295.5	504.5	69.0	151.0	8.250	356.5	6.490	6623.5	8.0	90.5	42.5	14.0
Q-3	6.290	2.160	346.0	541.0	79.5	205.0	8.750	374.0	6.650	8245.0	12.0	96.5	46.0	15.4
N	14.000	16.000	14.0	14.0	16.0	15.0	16.000	16.0	12.000	12.0	12.0	12.0	12.0	12.0
AVG	5.881	2.121	316.3	512.9	72.6	152.1	8.238	358.1	6.311	6421.4	7.8	90.8	42.5	14.2
S.D.	0.658	0.185	108.3	97.7	13.5	59.3	0.756	25.5	0.627	2428.5	5.0	6.2	4.5	1.7
S.E	0.176	0.046	28.9	26.1	3.4	15.3	0.189	6.4	0.181	701.0	1.7	1.8	1.3	0.5

EXPERIMENT F GROUP 2

ID#	T.P.	GLOB	GLU	T.L.	CHOL	TRIG	WT/DAY	FNL WT	RBC	WBC	POLY	LYMS	HCT	HGB
217	6.010	2.040	207.0	498.0	64.0	141.0	7.500	348.0	5.300	5340.0	15.0	81.0	39.0	12.9
218	6.040	2.130	0.0	540.0	63.0	77.0	7.800	330.0	5.900	4380.0	6.0	94.0	43.0	14.6
219	6.010	2.250	165.0	507.0	78.0	110.0	6.600	315.0	6.500	3990.0	6.0	93.0	46.0	14.9
220	6.770	2.120	280.0	656.0	72.0	230.0	9.200	395.0	5.810	6980.0	7.0	92.0	43.0	13.7
221	6.600	2.440	281.0	526.0	63.0	182.0	8.200	370.0	6.030	9790.0	10.0	88.0	45.0	15.0
222	6.740	2.280	167.0	618.0	74.0	215.0	8.500	379.0	5.980	4600.0	10.0	89.0	45.0	14.7
223	5.630	2.080	439.0	541.0	71.0	195.0	7.200	332.0	0.000	0.0	0.0	0.0	0.0	0.0
224	6.210	2.170	232.0	537.0	80.0	92.0	7.300	343.0	5.900	4350.0	9.0	91.0	43.0	14.0
225	6.150	1.890	0.0	567.0	79.0	167.0	9.200	386.0	5.880	4110.0	9.0	90.0	42.0	13.7
226	5.930	2.100	505.0	447.0	59.0	184.0	7.500	330.0	6.270	8460.0	10.0	87.0	45.0	15.0
227	0.000	2.080	315.0	0.0	71.0	253.0	8.400	369.0	5.500	9790.0	4.0	95.0	43.0	14.6
228	6.250	2.040	285.0	617.0	81.0	241.0	8.300	348.0	5.640	8470.0	5.0	94.0	42.0	14.0
229	6.420	2.520	215.0	447.0	67.0	80.0	7.600	332.0	5.460	8220.0	6.0	92.0	42.0	14.0
230	7.160	2.250	231.0	645.0	77.0	180.0	7.700	343.0	5.790	4080.0	10.0	89.0	45.0	14.7
231	6.180	2.150	202.0	633.0	83.0	234.0	0.000	999.0	6.420	4970.0	11.0	89.0	44.0	14.5
232	6.040	2.070	257.0	554.0	64.0	204.0	7.400	333.0	6.360	7880.0	11.0	88.0	44.0	14.0
Q-1	6.010	2.075	207.0	507.0	64.0	107.0	7.400	332.0	5.640	4350.0	6.0	88.0	42.0	14.0
MED	6.180	2.125	244.5	541.0	71.5	181.0	7.700	343.0	5.900	5340.0	9.0	90.0	43.0	14.5
Q-3	6.600	2.225	285.0	618.0	78.5	222.5	8.400	370.0	6.270	8460.0	10.0	93.0	45.0	14.7
N	15.000	16.000	14.0	15.0	16.0	16.0	15.000	15.0	15.000	15.0	15.0	15.0	15.0	15.0
AVG	6.277	2.158	269.4	555.5	71.6	169.1	7.893	350.7	5.921	6355.3	8.6	90.1	43.4	14.3
S.D.	0.393	0.154	95.9	67.0	7.6	68.7	0.731	23.5	0.368	2209.7	2.9	3.5	1.8	0.6
S.E	0.101	0.038	25.6	17.3	1.9	15.2	0.189	6.1	0.095	570.6	0.7	0.9	0.5	0.2

Table B-5

EXPERIMENT F GROUP 3

ID#	T.P.	GLOB	GLU	T.L.	CHOL	TRIG	WT/DAY	FNL WT	RBC	WBC	POLY	LYMS	HCT	HGB
333	6.460	2.110	226.0	533.0	92.0	159.0	8.300	367.0	6.550	7660.0	4.0	96.0	45.0	15.2
334	5.750	1.410	242.0	632.0	101.0	148.0	8.300	380.0	5.700	5470.0	5.0	94.0	43.0	14.2
335	5.920	2.150	242.0	554.0	74.0	197.0	7.500	364.0	5.970	5820.0	7.0	92.0	45.0	15.1
336	5.970	2.020	407.0	464.0	68.0	125.0	7.200	339.0	7.640	2300.0	8.0	91.0	50.0	17.7
337	6.280	2.180	213.0	554.0	62.0	244.0	6.700	307.0	5.740	2060.0	3.0	96.0	43.0	14.0
338	7.150	2.130	165.0	570.0	63.0	170.0	6.200	290.0	6.430	5200.0	3.0	95.0	45.0	15.0
339	6.490	2.230	220.0	508.0	66.0	198.0	7.000	324.0	5.760	3030.0	5.0	94.0	43.0	13.9
340	6.050	2.060	272.0	541.0	86.0	132.0	6.400	299.0	5.590	6150.0	6.0	94.0	42.0	14.0
341	5.370	2.120	295.0	462.0	76.0	115.0	8.600	388.0	6.560	7750.0	11.0	86.0	45.0	15.1
342	6.280	2.310	152.0	444.0	74.0	77.0	7.400	331.0	5.530	3310.0	7.0	92.0	44.0	14.2
343	6.030	2.420	191.0	535.0	78.0	131.0	7.200	321.0	6.260	9260.0	11.0	87.0	45.0	14.4
344	5.890	2.120	262.0	349.0	48.0	77.0	7.600	331.0	5.500	5590.0	3.0	95.0	41.0	13.6
345	5.470	2.060	299.0	471.0	58.0	228.0	8.700	369.0	5.420	6350.0	5.0	93.0	43.0	14.0
346	5.340	2.030	220.0	370.0	53.0	74.0	6.800	280.0	5.620	5200.0	4.0	92.0	43.0	13.9
347	6.060	2.010	214.0	554.0	81.0	76.0	9.300	392.0	5.430	4840.0	5.0	94.0	43.0	14.1
348	7.290	2.370	176.0	714.0	75.0	348.0	7.200	336.0	5.700	6360.0	10.0	89.0	45.0	15.0
Q-1	5.820	2.045	202.0	[illegible]	61.0	96.0	6.850	314.0	5.560	4875.0	4.0	91.5	43.0	14.0
MED	6.040	2.120	223.0	534.0	74.0	136.0	7.300	333.5	5.720	5530.0	5.0	93.5	43.5	14.2
Q-3	6.370	2.205	267.0	554.0	79.5	197.5	8.300	368.0	6.345	6355.0	7.5	94.5	45.0	15.1
N	16.000	16.000	16.0	16.0	16.0	16.0	16.000	16.0	16.000	16.0	16.0	16.0	16.0	16.0
AVG	6.113	2.188	237.3	515.9	71.7	155.7	7.475	338.6	5.963	5451.9	6.1	92.6	44.1	14.6
S.D.	0.553	0.223	62.2	90.7	14.3	74.5	0.948	35.0	0.593	1898.1	2.7	3.1	2.0	1.0
S.E.	0.138	0.056	15.6	22.7	3.6	18.6	0.237	8.8	0.148	474.5	0.7	0.8	0.5	0.2

EXPERIMENT F GROUP 4

ID#	T.P.	GLOB	GLU	T.L.	CHOL	TRIG	WT/DAY	FNL WT	RBC	WBC	POLY	LYMS	HCT	HGB
449	5.680	2.150	318.0	519.0	67.0	117.0	6.900	334.0	5.260	2800.0	5.0	95.0	41.0	13.3
450	5.770	2.040	255.0	494.0	63.0	92.0	8.000	357.0	0.000	0.0	0.0	0.0	0.0	0.0
451	5.000	2.060	223.0	508.0	68.0	114.0	8.200	382.0	6.430	5520.0	12.0	87.0	48.0	15.4
452	0.000	1.960	614.0	0.0	76.0	153.0	7.000	329.0	5.920	6230.0	8.0	91.0	43.0	14.2
453	4.960	1.810	295.0	396.0	55.0	120.0	7.400	336.0	5.450	3160.0	18.0	81.0	44.0	14.5
454	6.280	2.160	213.0	488.0	64.0	244.0	6.900	338.0	5.420	6140.0	10.0	89.0	44.0	14.4
455	5.970	2.030	206.0	575.0	79.0	92.0	7.300	324.0	6.370	6470.0	9.0	90.0	43.0	14.6
456	6.270	2.070	258.0	430.0	77.0	79.0	7.800	354.0	6.060	3640.0	6.0	92.0	42.0	13.4
457	6.030	1.890	186.0	602.0	77.0	256.0	7.100	312.0	5.730	9170.0	2.0	97.0	43.0	14.1
458	7.000	2.000	287.0	585.0	72.0	210.0	7.900	348.0	3.820	2430.0	5.0	95.0	28.0	9.6
459	6.100	2.140	386.0	0.0	73.0	319.0	8.000	348.0	0.150	1580.0	3.0	95.0	34.0	10.2
460	5.700	1.770	243.0	480.0	63.0	128.0	6.800	305.0	5.740	3510.0	6.0	93.0	42.0	13.9
461	5.680	2.220	92.0	354.0	59.0	54.0	7.300	350.0	6.210	4690.0	10.0	90.0	43.0	14.2
462	6.050	1.940	194.0	363.0	65.0	315.0	6.400	295.0	5.810	2340.0	8.0	90.0	42.0	14.0
463	5.890	1.930	194.0	451.0	69.0	155.0	8.200	375.0	6.630	8480.0	8.0	91.0	44.0	14.4
464	5.030	1.980	135.0	488.0	63.0	73.0	6.300	301.0	6.260	5790.0	10.0	90.0	43.0	14.1
Q-1	5.680	1.935	194.0	488.0	63.0	92.0	6.900	318.0	5.420	2800.0	5.0	90.0	42.0	13.4
MED	5.890	2.035	233.0	498.5	67.5	124.0	7.300	337.0	5.810	4690.0	8.0	91.0	43.0	14.1
Q-3	6.100	2.110	291.0	519.0	74.5	227.0	7.950	352.0	6.260	6230.0	10.0	95.0	44.0	14.4
N	15.000	16.000	16.0	14.0	16.0	16.0	16.000	16.0	15.000	15.0	15.0	15.0	15.0	15.0
AVG	5.975	2.014	256.2	468.9	68.1	157.6	7.344	336.8	5.417	4791.3	8.0	91.1	41.6	13.6
S.D.	0.487	0.127	118.6	95.9	7.0	85.3	0.616	25.2	1.605	2266.7	3.9	4.0	4.7	1.6
S.E.	0.126	0.032	29.7	25.6	1.8	21.3	0.154	6.3	0.415	585.3	1.0	1.0	1.2	0.4

Table B–6

EXPERIMENT F GROUP 5

ID#	T.P.	GLOB	GLU	T.L.	CHOL	TRIG	WT/DAY	FNL WT	RBC	WBC	POLY	LYMS	HCT	HGB
565	6.500	2.330	472.0	614.0	71.0	229.0	7.100	327.0	6.470	6310.0	6.0	93.0	45.0	15.0
566	5.650	2.100	165.0	533.0	78.0	168.0	6.400	325.0	6.760	2730.0	5.0	94.0	45.0	14.6
567	6.700	1.990	215.0	575.0	87.0	170.0	6.200	290.0	5.330	7250.0	5.0	94.0	40.0	12.9
568	5.870	2.400	98.0	494.0	64.0	162.0	7.600	358.0	6.350	7880.0	10.0	89.0	42.0	13.7
569	5.370	2.290	78.0	430.0	71.0	106.0	7.000	335.0	6.240	4140.0	6.0	93.0	43.0	14.0
570	6.580	1.930	155.0	622.0	69.0	270.0	7.200	340.0	6.600	7360.0	7.0	91.0	44.0	14.7
571	6.190	2.030	201.0	489.0	68.0	125.0	7.400	350.0	6.290	4500.0	8.0	89.0	43.0	13.8
572	6.060	1.670	129.0	413.0	56.0	130.0	6.100	307.0	5.750	8940.0	9.0	90.0	43.0	14.6
573	6.050	1.780	173.0	498.0	67.0	172.0	8.100	346.0	5.940	6870.0	7.0	91.0	43.0	14.3
574	6.040	2.220	174.0	387.0	56.0	107.0	7.700	359.0	5.790	5400.0	16.0	84.0	42.0	13.7
575	5.230	2.830	292.0	380.0	59.0	68.0	7.500	354.0	6.230	7490.0	7.0	92.0	46.0	15.4
576	5.710	1.920	588.0	481.0	75.0	139.0	7.600	326.0	6.950	6270.0	5.0	93.0	48.0	16.6
577	5.650	2.030	220.0	481.0	51.0	132.0	7.500	337.0	6.500	10930.0	4.0	96.0	44.0	15.4
578	6.350	2.220	218.0	0.0	60.0	149.0	8.100	345.0	7.020	3270.0	7.0	89.0	48.0	17.0
579	6.170	2.120	182.0	416.0	52.0	114.0	6.800	333.0	7.120	6630.0	6.0	92.0	47.0	16.1
580	6.010	2.190	513.0	517.0	66.0	98.0	5.700	287.0	7.100	5710.0	8.0	90.0	49.0	17.4
Q-1	5.680	1.960	160.0	416.0	57.5	110.5	6.600	325.5	6.685	4950.0	5.5	89.5	43.6	13.9
MED	6.045	2.110	191.5	489.0	65.0	131.0	7.300	336.0	6.410	6298.0	7.0	91.5	44.0	14.7
Q-3	6.270	2.255	256.0	533.0	71.0	165.0	7.600	348.0	6.855	7425.0	8.0	93.0	46.5	15.8
N	16.000	16.000	16.0	15.0	16.0	16.0	16.000	16.0	16.000	16.0	16.0	16.0	16.0	16.0
AVG	6.008	2.128	241.6	488.7	65.1	142.3	7.125	332.4	6.483	6305.0	7.3	91.3	44.5	14.9
S.D	0.417	0.272	149.1	75.8	9.9	51.1	0.713	21.9	0.523	2089.6	2.8	2.8	2.5	1.3
S.E	0.104	0.068	37.3	19.6	2.5	12.8	0.178	5.5	0.131	522.4	0.7	0.7	0.6	0.3

EXPERIMENT F GROUP 6

ID#	T.P.	GLOB	GLU	T.L.	CHOL	TRIG	WT/DAY	FNL WT	RBC	WBC	POLY	LYMS	HCT	HGB
681	5.760	2.270	208.0	426.0	59.0	111.0	6.800	322.0	7.140	5140.0	4.0	95.0	48.0	16.7
682	6.680	2.040	221.0	0.0	62.0	168.0	8.000	384.0	6.200	8640.0	6.0	93.0	44.0	14.2
683	6.210	2.200	138.0	473.0	68.0	133.0	7.500	349.0	6.220	5590.0	11.0	87.0	43.0	14.2
684	5.530	1.930	239.0	357.0	55.0	130.0	7.100	344.0	6.320	10850.0	7.0	92.0	43.0	14.1
685	6.130	2.160	240.0	647.0	97.0	192.0	8.600	359.0	7.090	9850.0	5.0	94.0	46.0	15.6
686	5.990	2.250	216.0	595.0	54.0	220.0	8.600	385.0	6.370	4960.0	8.0	91.0	44.0	14.4
687	6.010	1.980	190.0	421.0	65.0	136.0	8.000	999.0	6.240	6060.0	10.0	90.0	43.0	14.2
688	6.010	2.100	132.0	467.0	72.0	122.0	6.800	317.0	6.640	5720.0	9.0	90.0	43.0	14.4
689	4.870	2.360	212.0	327.0	45.0	108.0	0.000	999.0	6.470	2630.0	7.0	91.0	45.0	15.1
690	6.250	2.230	260.0	567.0	78.0	173.0	8.700	363.0	6.510	2963.0	7.0	89.0	45.0	15.0
691	6.040	2.120	284.0	507.0	75.0	174.0	7.700	338.0	6.520	6180.0	8.0	92.0	44.0	13.7
692	5.800	1.930	154.0	604.0	82.0	170.0	8.200	362.0	6.260	7920.0	2.0	97.0	44.0	14.6
693	5.470	1.860	209.0	387.0	55.0	108.0	8.700	380.0	6.320	5570.0	17.0	82.0	43.0	14.0
694	5.800	1.990	336.0	455.0	75.0	122.0	8.500	382.0	6.320	5760.0	4.0	94.0	43.0	14.2
695	6.120	2.080	191.0	605.0	91.0	95.0	6.500	293.0	7.180	6550.0	8.0	91.0	49.0	16.7
696	5.910	2.060	138.0	443.0	65.0	132.0	7.400	316.0	6.670	8780.0	12.0	88.0	44.0	14.2
Q-1	5.780	1.985	172.0	421.0	57.0	116.5	7.100	322.0	6.290	5355.0	5.5	89.5	43.0	14.2
MED	6.000	2.100	210.5	467.0	66.5	132.5	7.950	354.0	6.420	5910.0	7.5	91.0	44.0	14.3
Q-3	6.125	2.215	239.5	595.0	76.5	171.5	8.600	380.0	6.655	8280.0	9.5	93.5	45.0	15.0
N	16.000	16.000	16.0	15.0	16.0	16.0	14.000	14.0	16.000	16.0	16.0	16.0	16.0	16.0
AVG	5.986	2.102	210.5	485.4	68.6	143.4	7.850	349.1	6.536	6341.4	7.8	91.0	44.4	14.7
S.D	0.390	0.142	55.4	98.5	14.1	35.3	0.839	29.3	0.333	2215.9	3.6	3.5	1.8	0.9
S.E	0.098	0.036	13.9	25.4	3.5	8.8	0.222	7.8	0.083	554.0	0.9	0.9	0.5	0.2

Table B-7

EXPERIMENT C GROUPS 1, 3, AND 6 (COMBINED)

ID#	T.P.	GLOB	GLU	T.L.	CHOL	TRIG	WT/DAY	FNL WT	RBC	WBC	POLY	LYMS	HCT	HGB
101	8.450	3.800	0.0	298.0	64.0	46.0	7.400	406.0	6.510	5630.0	12.0	83.0	43.0	14.2
102	9.000	4.150	225.0	325.0	52.0	67.0	8.200	432.0	7.030	3770.0	10.0	84.0	45.0	15.0
103	9.590	4.600	155.0	378.0	57.0	95.0	8.600	433.0	6.920	4830.0	6.0	92.0	43.0	14.2
104	8.120	3.300	282.0	312.0	74.0	113.0	7.500	401.0	7.740	6880.0	8.0	90.0	47.0	16.4
105	8.050	4.200	135.0	391.0	58.0	72.0	6.300	361.0	6.520	2820.0	19.0	81.0	43.0	14.4
106	6.150	2.300	195.0	378.0	67.0	121.0	7.000	410.0	7.440	3740.0	16.0	81.0	48.0	16.0
107	9.290	4.200	232.0	395.0	56.0	43.0	7.600	438.0	6.460	4020.0	5.0	90.0	45.0	14.7
108	8.830	3.800	150.0	318.0	52.0	59.0	7.000	383.0	6.880	6020.0	3.0	96.0	46.0	15.2
109	7.890	3.600	209.0	335.0	57.0	55.0	6.900	391.0	6.260	5060.0	14.0	85.0	43.0	14.2
110	7.840	3.200	226.0	368.0	78.0	67.0	6.800	385.0	6.390	5250.0	4.0	92.0	43.0	14.2
111	7.790	3.400	189.0	345.0	42.0	98.0	7.500	406.0	7.430	6810.0	4.0	93.0	48.0	15.9
112	7.450	3.100	130.0	371.0	45.0	33.0	7.000	431.0	6.460	3840.0	10.0	88.0	44.0	14.3
113	7.580	3.300	191.0	391.0	65.0	48.0	6.300	385.0	6.940	5260.0	7.0	91.0	47.0	15.7
114	5.830	2.400	178.0	382.0	52.0	46.0	5.900	366.0	6.750	5630.0	10.0	88.0	45.0	14.4
115	6.610	3.200	217.0	378.0	55.0	57.0	7.000	396.0	6.360	4550.0	9.0	89.0	43.0	14.6
116	8.980	3.900	204.0	388.0	35.0	42.0	7.200	413.0	6.590	5370.0	19.0	79.0	44.0	14.4
333	7.950	3.300	245.0	384.0	65.0	103.0	8.400	446.0	6.210	6220.0	12.0	87.0	43.0	14.4
334	6.820	2.700	202.0	278.0	45.0	53.0	6.400	373.0	7.300	3860.0	7.0	92.0	45.0	14.9
335	7.950	3.100	209.0	341.0	57.0	61.0	7.600	397.0	6.790	4900.0	10.0	85.0	42.0	13.9
336	8.260	3.700	293.0	318.0	56.0	80.0	7.200	404.0	7.350	5490.0	14.0	85.0	47.0	15.5
337	8.590	4.000	160.0	321.0	60.0	46.0	5.800	322.0	6.470	2330.0	6.0	93.0	45.0	15.0
338	8.010	3.600	219.0	364.0	87.0	75.0	5.100	331.0	6.920	6970.0	4.0	96.0	47.0	15.2
339	8.770	4.140	255.0	348.0	68.0	38.0	7.000	392.0	6.420	4480.0	5.0	94.0	43.0	14.2
340	9.060	4.100	159.0	328.0	67.0	83.0	7.100	403.0	6.380	6350.0	6.0	93.0	44.0	14.3
341	8.740	4.310	202.0	334.0	63.0	77.0	7.900	416.0	7.070	5450.0	4.0	93.0	46.0	15.5
342	5.670	2.950	387.0	295.0	54.0	43.0	6.600	361.0	6.570	3220.0	8.0	89.0	44.0	14.6
343	7.590	3.370	195.0	361.0	55.0	43.0	6.600	373.0	6.480	4440.0	5.0	92.0	42.0	13.7
344	7.130	3.050	220.0	308.0	97.0	92.0	7.700	425.0	6.260	5840.0	3.0	96.0	43.0	14.2
345	7.040	2.790	197.0	328.0	80.0	64.0	7.400	398.0	6.370	3120.0	7.0	92.0	43.0	14.8
346	6.100	2.600	149.0	324.0	76.0	42.0	6.300	359.0	6.420	3810.0	5.0	95.0	43.0	13.9
347	6.100	2.560	171.0	298.0	60.0	43.0	7.000	398.0	6.360	4860.0	17.0	81.0	43.0	14.3
348	8.000	3.900	204.0	368.0	48.0	68.0	7.400	391.0	6.630	3180.0	10.0	88.0	44.0	14.2
681	8.940	4.100	182.0	332.0	55.0	81.0	6.300	386.0	6.850	5370.0	10.0	89.0	45.0	14.6
682	7.890	3.600	285.0	315.0	45.0	89.0	6.700	396.0	6.570	2400.0	12.0	86.0	44.0	14.7
683	6.330	3.700	171.0	349.0	63.0	59.0	7.600	421.0	6.780	5630.0	7.0	93.0	43.0	14.2
684	7.870	3.400	256.0	339.0	45.0	65.0	7.400	402.0	7.040	5580.0	8.0	87.0	46.0	14.7
685	7.350	4.000	189.0	369.0	75.0	79.0	6.500	369.0	6.540	5290.0	9.0	90.0	45.0	14.9
686	7.060	3.200	282.0	319.0	51.0	39.0	6.200	373.0	6.730	4520.0	10.0	89.0	47.0	15.4
687	6.500	3.800	272.0	389.0	52.0	50.0	6.500	380.0	6.730	4410.0	7.0	92.0	45.0	15.0
688	7.630	3.400	213.0	382.0	68.0	62.0	7.200	395.0	6.810	6330.0	10.0	89.0	47.0	15.6
689	7.530	3.700	167.0	312.0	55.0	48.0	6.200	355.0	6.330	5100.0	12.0	85.0	43.0	14.7
690	7.610	3.600	263.0	329.0	69.0	110.0	8.900	443.0	6.200	3120.0	10.0	87.0	43.0	13.9
691	7.380	3.300	248.0	329.0	75.0	43.0	6.900	385.0	6.640	5800.0	7.0	92.0	45.0	15.0
692	9.090	4.200	202.0	389.0	68.0	167.0	6.100	360.0	6.620	2910.0	6.0	90.0	45.0	14.6
693	7.610	3.700	263.0	339.0	75.0	87.0	6.800	384.0	6.780	6000.0	10.0	84.0	47.0	15.0
694	8.050	3.600	157.0	305.0	88.0	38.0	6.400	378.0	6.910	5390.0	8.0	92.0	47.0	15.3
695	7.760	3.500	178.0	325.0	59.0	47.0	6.400	377.0	6.650	4990.0	11.0	86.0	46.0	14.3
696	7.890	3.600	229.0	315.0	63.0	34.0	6.200	360.0	6.740	6660.0	6.0	92.0	46.0	15.2
Q-1	7.095	3.200	178.0	312.0	53.0	43.0	6.400	373.0	6.420	3850.0	6.0	86.0	43.0	14.2
MED	7.830	3.600	202.0	328.5	59.5	68.0	7.000	398.5	6.635	5000.0	8.0	89.5	45.0	14.6
Q-3	8.355	3.900	232.0	362.5	68.0	80.5	7.450	406.0	6.895	5630.0	10.0	92.0	46.0	15.1
N	48.000	48.000	47.0	48.0	48.0	48.0	48.000	48.0	48.000	48.0	48.0	48.0	48.0	48.0
AVG	7.711	3.521	208.0	335.2	61.4	65.7	6.958	391.8	6.698	4797.9	8.8	89.1	44.7	14.7
S.D.	0.981	0.525	42.8	29.9	12.6	27.1	0.791	27.3	0.349	1198.1	3.9	4.3	1.7	0.6
S.E.	0.142	0.076	6.2	4.3	1.8	3.9	0.114	3.9	0.050	172.9	0.6	0.6	0.2	0.1

Table B-8

EXPERIMENT G GROUPS 2, 4, AND 5 (COMBINED)

ID#	T.P.	GLOB	GLU	T.L.	CHOL	TRIG	WT/DAY	FNL WT	RBC	WBC	POLY	LYMS	HCT	HGB
217	9.180	4.200	214.0	318.0	60.0	62.0	6.700	382.0	6.630	3130.0	9.0	87.0	44.6	14.6
218	8.860	4.100	223.0	288.0	63.0	65.0	6.900	351.0	6.680	5440.0	10.0	87.0	45.0	15.2
219	8.300	3.200	217.0	348.0	74.0	77.0	5.700	348.0	7.220	6160.0	9.0	87.0	44.0	14.6
220	7.210	3.000	212.0	365.0	57.0	62.0	6.100	356.0	6.780	2560.0	6.0	92.0	44.0	14.8
221	9.650	4.700	309.0	328.0	125.0	76.0	6.700	392.0	6.510	3470.0	8.0	91.0	46.0	15.2
222	6.190	2.780	288.0	308.0	56.0	57.0	5.900	350.0	6.460	4330.0	6.0	93.0	45.0	14.6
223	7.690	3.300	235.0	308.0	54.0	127.0	6.500	374.0	6.780	3820.0	8.0	87.0	46.0	15.0
224	8.020	3.600	191.0	368.0	64.0	70.0	6.600	374.0	6.960	6330.0	12.0	86.0	47.0	15.4
225	6.270	2.880	173.0	385.0	60.0	67.0	7.100	395.0	6.270	2620.0	5.0	95.0	43.0	14.0
226	9.130	4.400	233.0	302.0	53.0	70.0	7.500	412.0	6.420	4150.0	6.0	92.0	43.0	14.3
227	8.510	3.600	259.0	336.0	59.0	104.0	7.700	424.6	6.580	4630.0	21.0	72.0	43.0	14.0
228	7.730	3.700	177.0	348.0	101.0	70.0	7.100	399.0	6.440	2630.0	11.0	88.0	44.0	14.2
229	4.990	2.560	208.0	305.0	68.0	48.0	7.000	391.0	6.940	5680.0	8.0	92.0	47.0	15.7
230	7.770	3.800	205.0	385.0	62.0	59.0	7.200	405.0	6.870	5060.0	5.0	94.0	47.0	15.5
231	8.760	3.800	244.0	328.0	65.0	72.0	6.500	374.0	6.990	7450.0	12.0	87.0	45.0	15.0
232	8.800	4.200	256.0	358.0	70.0	66.0	7.500	417.0	6.310	5780.0	11.0	86.0	43.0	14.0
449	7.590	3.200	196.0	341.0	58.0	63.0	6.200	348.0	5.860	3130.0	6.0	92.0	42.0	14.0
450	8.660	3.700	270.0	314.0	40.0	89.0	6.400	364.0	7.110	6420.0	7.0	91.0	45.0	14.9
451	5.990	2.870	243.0	358.0	55.0	76.0	7.300	378.0	6.780	5650.0	15.0	82.0	43.0	14.0
452	6.840	3.000	227.0	341.0	105.0	84.0	6.700	393.0	7.230	8740.0	10.0	89.0	46.0	15.3
453	9.140	3.700	301.0	304.0	75.0	132.0	6.200	371.0	7.200	3860.0	7.0	93.0	47.0	15.7
454	7.610	3.500	191.0	311.0	66.0	68.0	7.400	415.0	6.470	2940.0	4.0	95.0	44.0	14.3
455	7.040	3.500	181.0	331.0	140.0	58.0	7.400	411.0	6.420	4750.0	8.0	91.0	43.0	14.0
456	7.410	3.120	154.0	331.0	65.0	42.0	7.000	399.0	6.280	3790.0	6.0	94.0	43.0	14.0
457	8.020	3.640	198.0	354.0	35.0	62.0	8.000	415.0	6.440	3460.0	12.0	83.0	44.0	14.3
458	7.230	3.090	200.0	344.0	85.0	54.0	4.900	317.0	7.110	4750.0	5.0	94.0	47.0	15.4
459	7.640	4.000	212.0	361.0	77.0	92.0	7.600	419.0	6.770	4200.0	7.0	93.0	47.0	15.1
460	7.370	3.300	249.0	328.0	69.0	44.0	6.000	338.0	7.210	3940.0	8.0	91.0	47.0	15.4
461	6.930	3.900	239.0	314.0	65.0	57.0	6.400	377.0	6.960	5010.0	6.0	91.0	48.0	15.3
462	9.140	4.500	215.0	298.0	49.0	60.0	7.000	397.0	6.430	5570.0	7.0	93.0	43.0	14.1
463	7.980	3.400	170.0	351.0	68.0	76.0	8.400	434.0	7.160	5550.0	19.0	76.0	47.0	15.8
464	6.570	3.200	175.0	334.0	75.0	57.0	5.900	361.0	6.350	3390.0	13.0	87.0	43.0	14.0
565	8.180	3.900	275.0	339.0	57.0	56.0	7.900	431.0	6.710	6320.0	11.0	88.0	45.0	15.0
566	7.810	3.500	199.0	349.0	63.0	58.0	7.000	397.0	6.950	3160.0	9.0	88.0	45.0	15.0
567	6.920	3.200	229.0	309.0	57.0	49.0	6.800	382.0	6.410	2250.0	4.0	95.0	43.0	14.2
568	7.790	3.600	203.0	315.0	61.0	49.0	6.300	360.0	6.780	2790.0	14.0	84.0	44.0	14.2
569	7.330	3.300	226.0	305.0	53.0	50.0	5.900	352.0	6.710	5690.0	5.0	94.0	47.0	15.5
570	6.600	3.200	219.0	332.0	62.0	67.0	6.000	352.0	6.420	3930.0	9.0	90.0	45.0	14.8
571	7.700	3.100	210.0	352.0	68.0	78.0	6.400	378.0	6.320	5350.0	7.0	93.0	43.0	13.9
572	7.000	3.900	189.0	342.0	35.0	47.0	7.200	387.0	6.390	4830.0	14.0	83.0	44.0	14.2
573	8.350	3.900	251.0	305.0	56.0	68.0	7.100	402.0	6.360	4410.0	9.0	86.0	44.0	14.2
574	8.170	3.500	208.0	329.0	55.0	68.0	7.100	408.0	7.140	5670.0	10.0	89.0	47.0	15.0
575	6.990	3.000	242.0	295.0	55.0	42.0	5.800	343.0	6.540	3620.0	20.0	77.0	44.0	14.3
576	9.880	4.500	184.0	349.0	54.0	33.0	7.300	406.0	6.660	5190.0	12.0	86.0	45.0	14.3
577	7.280	3.200	209.0	362.0	53.0	40.0	7.200	395.0	6.400	5190.0	8.0	92.0	45.0	14.9
578	6.500	3.400	193.0	309.0	72.0	49.0	6.700	383.0	6.770	3590.0	6.0	91.0	44.0	14.6
579	6.650	3.500	191.0	322.0	50.0	38.0	6.300	370.0	7.180	3470.0	16.0	80.0	46.0	15.2
580	8.030	3.800	253.0	319.0	62.0	119.0	7.200	405.0	6.960	4860.0	13.0	85.0	45.0	15.2
Q-1	6.995	3.200	194.5	310.0	55.0	52.0	6.250	362.5	6.420	3470.0	6.0	86.0	43.5	14.2
MED	7.695	3.500	213.0	331.0	62.0	62.5	6.750	385.0	6.695	4520.0	8.5	89.5	45.0	14.7
Q-3	8.325	3.850	242.5	349.0	69.5	74.0	7.200	405.0	6.960	5560.0	12.0	92.5	46.0	15.2
N	48.000	48.000	48.0	48.0	48.0	48.0	48.000	48.0	48.000	48.0	48.0	48.0	48.0	48.0
AVG	7.675	3.546	219.7	331.8	65.6	66.2	6.765	384.0	6.694	4556.5	9.5	88.6	44.8	14.7
S.D.	0.978	0.484	34.5	23.7	19.4	21.3	0.696	26.8	0.327	1365.2	4.1	5.2	1.6	0.6
S.E.	0.141	0.070	5.0	3.4	2.8	3.1	0.100	3.9	0.047	197.0	0.6	0.7	0.2	0.1

Table B-9

EXPERIMENT H GROUP 1

ID#	T.P.	GLOB	GLU	T.L.	CHOL	TRIG	WT/DAY	FNL WT	RBC	WBC	POLY	LYMS	HCT	HGB
101	5.470	1.980	144.0	461.0	75.8	75.2	6.500	356.0	6.230	3410.0	9.0	90.0	43.0	14.6
102	5.320	1.760	8.0	257.0	62.2	58.9	7.400	403.0	5.940	2816.0	9.0	89.0	40.0	13.7
103	5.210	2.810	195.0	466.0	45.4	57.5	5.400	348.0	6.420	4750.0	5.0	92.0	40.0	13.2
104	5.610	2.120	219.0	298.0	57.0	163.0	7.000	391.0	6.530	5350.0	12.0	86.0	46.0	15.0
105	5.060	2.020	293.0	407.0	52.4	60.0	7.400	398.0	6.150	3810.0	8.0	89.0	42.0	13.2
106	5.680	2.010	218.0	298.0	61.4	158.0	7.600	413.0	6.760	7510.0	12.0	86.0	47.0	15.2
107	6.260	2.280	161.0	348.0	51.0	101.6	7.300	412.0	6.650	5960.0	10.0	89.0	45.0	15.0
108	6.640	2.560	196.0	384.0	46.1	79.1	8.100	424.0	6.360	6050.0	10.0	89.0	44.0	14.6
109	5.700	2.290	261.0	421.0	88.9	149.0	8.000	440.0	6.850	7480.0	8.0	91.0	47.0	15.0
110	7.200	2.820	214.0	439.0	47.2	80.1	7.600	404.0	6.470	4380.0	13.0	96.0	44.0	14.8
111	5.430	1.910	157.0	402.0	58.0	73.2	6.600	374.0	6.660	5460.0	6.0	98.0	47.0	15.3
112	5.550	2.230	190.0	375.0	75.6	53.1	5.300	349.0	6.550	5890.0	9.0	90.0	45.0	15.0
113	5.550	2.060	211.0	383.0	87.7	50.9	6.200	382.0	6.850	2530.0	10.0	89.0	48.0	15.6
114	5.560	1.900	207.0	339.0	70.5	72.4	7.000	382.0	6.850	4340.0	5.0	92.0	47.0	15.2
115	5.720	2.160	222.0	380.0	79.5	126.0	7.500	412.0	6.380	4570.0	6.0	90.0	44.0	13.6
116	5.900	2.170	217.0	334.0	36.9	65.1	7.400	409.0	6.520	4170.0	9.0	91.0	51.0	17.0
Q-1	5.450	1.995	190.0	318.5	49.1	58.8	6.550	378.0	6.370	3990.0	7.0	89.0	43.5	14.2
MED	5.585	2.090	211.0	377.5	59.7	74.2	7.350	400.5	6.525	4660.0	9.0	89.5	45.0	15.0
Q-3	5.810	2.255	219.0	414.0	73.7	113.5	7.550	412.0	6.710	5925.0	10.0	90.5	47.0	15.2
N	16.000	16.000	15.0	16.0	16.0	16.0	16.000	16.0	16.000	16.0	16.0	16.0	16.0	16.0
AVG	5.741	2.143	207.0	369.5	62.2	88.4	7.019	393.6	6.511	4984.8	8.8	89.3	45.0	14.8
S.D.	0.545	0.261	37.9	62.1	15.9	39.8	0.826	26.7	0.263	1461.2	2.4	1.9	2.9	1.0
S.E.	0.136	0.065	9.8	15.5	4.0	9.8	0.207	6.7	0.066	365.3	0.6	0.5	0.7	0.2

EXPERIMENT H GROUP 2

ID#	T.P.	GLOB	GLU	T.L.	CHOL	TRIG	WT/DAY	FNL WT	RBC	WBC	POLY	LYMS	HCT	HGB
217	5.410	2.020	112.0	362.0	53.2	92.5	8.400	436.0	6.220	6410.0	4.0	94.0	42.0	12.0
218	5.530	1.926	151.0	366.0	82.4	89.7	7.706	414.0	6.060	6100.0	6.0	88.0	44.0	14.6
219	5.060	1.820	175.0	348.0	65.9	0.0	5.400	319.0	5.660	2200.0	10.0	89.0	34.0	10.7
220	7.480	2.900	161.0	293.0	47.8	81.7	6.800	387.0	6.880	9620.0	6.0	91.0	48.0	15.3
221	5.600	2.160	224.0	325.0	52.8	54.9	6.300	349.0	6.300	2970.0	12.0	84.0	43.0	14.0
222	5.480	2.010	185.0	380.0	64.4	63.8	8.300	431.0	6.620	7420.0	7.0	92.0	46.0	14.8
223	5.810	2.300	269.0	475.0	78.9	84.3	7.600	385.0	6.380	5570.0	10.0	89.0	43.0	14.2
224	5.450	1.890	179.0	343.0	58.1	76.9	7.300	372.0	6.450	7460.0	9.0	89.0	46.0	15.2
225	6.660	2.540	199.0	339.0	66.4	113.0	7.400	394.0	6.210	5250.0	10.0	88.0	44.0	14.0
226	5.510	1.870	245.0	357.0	63.7	71.8	7.100	400.0	6.370	7330.0	10.0	87.0	44.0	14.6
227	5.330	1.970	222.0	380.0	46.1	77.6	7.600	403.0	6.480	4270.0	9.0	88.0	45.0	14.8
228	5.870	2.300	226.0	416.0	62.8	129.0	8.200	412.0	7.070	6410.0	8.0	91.0	47.0	15.6
229	5.400	1.930	167.0	325.0	85.1	84.7	8.000	427.0	6.610	7370.0	10.0	86.0	46.0	14.4
230	5.720	2.340	206.0	407.0	57.4	68.2	6.900	403.0	6.640	4360.0	5.0	94.0	46.0	15.0
231	6.090	2.430	227.0	425.0	71.3	62.0	6.400	355.0	6.990	4220.0	12.0	87.0	46.0	15.0
232	6.360	2.480	252.0	330.0	51.0	94.5	7.200	386.0	6.350	2190.0	10.0	79.0	46.0	14.5
Q-1	5.430	1.925	177.0	334.5	53.0	68.2	6.850	378.5	6.260	4245.0	6.5	87.0	43.5	14.1
MED	5.565	2.090	202.5	359.5	63.3	81.7	7.350	397.0	6.415	5835.0	9.5	89.5	45.5	14.6
Q-3	5.980	2.385	226.5	393.5	68.7	92.5	7.850	413.0	6.630	7350.0	10.0	91.0	46.0	15.0
N	16.000	16.000	16.0	16.0	16.0	15.0	16.000	16.0	16.000	16.0	16.0	16.0	16.0	16.0
AVG	5.798	2.180	201.3	366.9	62.4	83.0	7.287	392.1	6.456	5571.9	8.6	88.5	44.4	14.3
S.D.	0.604	0.305	40.9	45.9	11.4	19.5	0.806	31.6	0.354	2098.4	2.4	3.7	3.2	1.3
S.E.	0.151	0.076	10.2	11.5	2.9	5.0	0.201	7.9	0.089	524.6	0.6	0.9	0.8	0.3

Table B-10

EXPERIMENT H GROUP 3

ID#	T.P.	GLOB	GLU	T.L.	CHOL	TRIG	WT/DAY	FNL WT	RBC	WBC	POLY	LYMS	HCT	HGB
333	6.320	2.450	142.0	421.0	51.6	70.5	7.000	377.0	5.880	5480.0	6.0	92.0	41.0	12.4
334	5.390	2.040	130.0	353.0	112.8	92.8	7.600	412.0	6.420	7640.0	8.0	89.0	45.0	14.0
335	5.860	2.810	207.0	312.0	62.5	134.0	8.900	446.0	8.000	0.0	0.0	0.0	0.0	0.0
336	5.500	2.870	226.0	307.0	51.9	106.0	6.900	374.0	6.520	5550.0	6.0	94.0	45.0	14.7
337	5.350	1.870	170.0	348.0	53.8	73.8	8.800	400.0	6.470	7820.0	5.0	91.0	44.0	14.1
338	5.250	1.800	171.9	365.0	77.8	53.3	9.500	477.0	6.510	5520.0	11.0	88.0	43.0	14.0
339	5.320	1.930	178.0	386.0	67.5	66.1	6.500	378.0	6.350	6880.0	12.0	86.0	43.0	14.0
340	5.810	2.820	0.0	411.0	62.1	108.0	7.100	388.0	6.500	4480.0	7.0	92.0	46.0	14.6
341	5.310	1.960	133.0	243.0	57.4	66.0	6.500	368.0	6.590	10410.0	9.0	91.0	45.0	15.2
342	5.120	1.920	217.0	366.0	54.8	78.4	7.100	395.0	6.610	2180.0	14.0	85.0	45.0	14.5
343	6.080	2.230	186.0	293.0	53.0	102.0	7.400	401.0	6.530	3250.0	10.0	90.0	45.0	15.0
344	5.480	1.890	233.0	312.0	59.9	99.9	5.500	336.0	6.910	8420.0	7.0	90.0	48.0	15.8
345	5.420	1.860	177.0	362.0	64.3	65.9	8.500	431.0	8.000	0.0	0.0	0.0	0.0	0.0
346	6.170	2.270	192.0	375.0	52.0	137.0	8.000	406.0	6.540	7820.0	6.0	90.0	45.0	14.7
347	5.180	1.910	230.0	375.0	66.5	58.1	6.500	368.0	6.660	3180.0	13.0	83.0	45.0	15.0
348	5.110	2.080	216.0	321.0	70.0	78.1	8.200	420.0	6.890	4970.0	11.0	86.0	48.0	16.4
Q-1	5.280	1.900	170.0	312.0	53.0	66.1	6.650	375.5	6.470	4480.0	6.0	86.0	44.0	14.0
MED	5.485	1.980	186.0	363.5	61.0	78.3	7.100	397.5	6.525	5535.0	8.5	90.0	45.0	14.7
Q-3	5.805	2.855	217.0	377.5	67.0	104.0	8.100	416.0	6.610	7640.0	11.0	91.0	45.0	15.0
N	16.000	16.000	15.0	16.0	16.0	16.0	16.000	16.0	14.000	14.0	14.0	14.0	14.0	14.0
AVG	5.533	2.014	187.2	349.0	63.7	86.9	7.375	398.6	6.527	5914.3	8.9	89.1	44.9	14.6
S.D.	0.375	0.172	34.4	47.4	14.9	25.6	1.029	34.2	0.244	2273.6	2.9	3.1	1.8	0.9
S.E.	0.094	0.043	8.9	11.8	3.7	6.4	0.257	8.6	0.065	607.6	0.8	0.8	0.5	0.3

EXPERIMENT H GROUP 4

ID#	T.P.	GLOB	GLU	T.L.	CHOL	TRIG	WT/DAY	FNL WT	RBC	WBC	POLY	LYMS	HCT	HGB
449	5.970	2.070	161.0	402.0	83.9	132.0	6.300	364.0	6.850	3680.0	5.0	93.0	47.0	16.0
450	5.410	2.040	175.0	384.0	41.2	73.2	6.500	357.0	6.690	6730.0	16.0	83.0	45.0	14.0
451	5.190	1.930	221.0	366.0	45.6	61.6	6.500	397.0	6.890	4120.0	8.0	90.0	45.0	15.0
452	5.250	1.910	175.0	398.0	43.9	83.4	7.600	400.0	6.440	5350.0	7.0	92.0	45.0	14.2
453	5.350	1.840	150.0	312.0	54.5	109.0	7.100	391.0	6.960	4130.0	4.0	94.0	47.0	15.3
454	5.430	1.950	155.0	352.0	59.2	90.7	7.300	377.0	6.640	7930.0	8.0	90.0	46.0	15.1
455	5.510	1.980	224.0	316.0	46.4	60.7	7.000	384.0	6.850	7190.0	8.0	91.0	45.0	15.3
456	5.660	2.260	169.0	362.0	63.7	83.9	6.300	370.0	6.830	7060.0	8.0	90.0	47.0	15.3
457	5.420	1.980	272.0	271.0	87.7	98.1	6.000	350.0	6.490	4550.0	5.0	95.0	45.0	14.8
458	6.010	2.080	245.0	289.0	96.4	94.9	6.110	357.0	6.920	4450.0	4.0	94.0	48.0	15.6
459	5.490	2.210	212.0	334.0	48.7	58.1	7.500	395.0	6.490	5730.0	3.0	95.0	45.0	14.7
460	5.840	2.110	188.0	307.0	57.8	135.0	8.600	445.0	6.630	6830.0	12.0	88.0	47.0	15.0
461	5.010	1.710	226.0	439.0	48.7	45.5	6.200	379.0	6.560	5210.0	4.0	95.0	46.0	14.8
462	5.310	1.910	218.0	352.0	58.2	67.6	6.200	344.0	6.840	4470.0	13.0	84.0	46.0	14.8
463	6.120	2.660	199.0	443.0	94.4	58.6	4.800	334.0	6.370	7990.0	6.0	94.0	43.0	14.4
464	5.470	1.880	283.0	325.0	71.6	71.5	5.400	328.0	6.880	9960.0	9.0	87.0	47.0	15.4
Q-1	5.338	1.918	172.0	314.9	46.8	61.2	6.155	353.5	6.525	4460.0	4.5	89.0	45.0	14.8
MED	5.450	1.980	201.0	352.0	56.2	78.3	6.400	373.5	6.760	5548.0	7.5	91.5	46.0	15.0
Q-3	5.750	2.095	222.5	391.0	77.8	96.5	7.200	389.0	6.865	7125.0	8.5	94.0	47.0	15.3
N	16.000	16.000	16.0	16.0	16.0	16.0	16.000	16.0	16.000	16.0	16.0	16.0	16.0	16.0
AVG	5.528	2.033	199.1	353.3	61.6	81.7	6.588	372.6	6.708	5965.0	7.5	90.9	45.9	15.0
S.D.	0.313	0.217	34.2	50.5	19.3	27.3	0.913	29.0	0.193	1775.1	3.6	3.8	1.3	0.5
S.E	0.079	0.054	8.5	12.6	4.8	6.8	0.228	7.2	0.048	443.8	0.9	1.0	0.3	0.1

Table B-11

EXPERIMENT H GROUP 5

ID#	T.P.	GLOB	GLU	T.L.	CHOL	TRIG	WT/DAY	FNL WT	RBC	WBC	POLY	LYMS	HCT	HGB
565	5.590	2.040	224.0	339.0	70.8	122.0	8.200	415.0	6.670	2570.0	8.0	89.0	47.0	15.6
566	6.110	2.230	177.0	393.0	43.1	92.8	6.400	382.0	6.830	4130.0	3.0	93.0	47.0	15.8
567	5.720	2.200	269.0	316.0	67.4	83.2	6.300	383.0	7.030	7410.0	7.0	92.0	47.0	15.4
568	5.450	2.000	0.0	470.0	36.1	83.2	6.200	382.0	6.660	6140.0	8.0	91.0	47.0	14.8
569	6.340	2.610	230.0	330.0	58.8	34.5	6.800	375.0	6.410	6790.0	10.0	88.0	43.0	13.6
570	5.350	1.950	235.0	407.0	62.1	43.5	6.300	357.0	6.340	6610.0	7.0	91.0	44.0	14.6
571	6.220	2.500	215.0	284.0	116.0	72.1	6.100	369.0	6.850	6820.0	5.0	93.0	45.0	15.0
572	6.670	2.630	250.0	321.0	70.2	88.5	7.400	392.0	6.480	1940.0	13.0	87.0	44.0	14.4
573	5.550	2.060	263.0	316.0	73.2	55.7	7.300	408.0	6.700	8340.0	6.0	93.0	47.0	15.4
574	5.660	2.270	134.0	339.0	67.0	48.4	7.300	405.0	6.820	4740.0	6.0	93.0	47.0	15.9
575	6.660	2.420	220.0	371.0	56.1	189.0	7.100	404.0	6.980	9810.0	10.0	87.0	48.0	15.4
576	5.720	2.120	253.0	253.0	68.2	62.0	7.400	396.0	6.810	4710.0	6.0	89.0	48.0	15.4
577	6.160	2.270	235.0	389.0	63.0	70.1	6.500	351.0	6.320	4270.0	9.0	89.0	44.0	14.2
578	5.810	2.010	333.0	384.0	66.5	284.0	6.800	368.0	6.540	8730.0	9.0	90.0	45.0	15.0
579	5.660	2.370	287.0	402.0	68.6	235.0	7.800	397.0	6.490	2700.0	12.0	85.0	45.0	15.0
580	6.260	2.420	248.0	325.0	62.5	90.0	8.100	428.0	7.180	9400.0	6.0	90.0	47.0	15.6
Q-1	5.625	2.050	215.0	318.5	60.5	58.5	6.350	372.0	6.485	4200.0	6.0	88.5	44.5	14.7
MED	5.765	2.250	235.0	339.0	66.8	83.2	6.950	387.5	6.685	6375.0	7.5	90.0	47.0	15.0
Q-3	6.240	2.420	253.0	391.0	69.4	107.4	7.400	404.5	6.840	7875.0	9.5	92.5	47.0	15.4
N	16.000	16.000	15.0	16.0	16.0	16.0	16.000	16.0	16.000	16.0	16.0	16.0	16.0	16.0
AVG	5.929	2.257	232.3	352.4	66.9	92.1	7.000	388.3	6.694	5894.4	7.8	90.1	45.9	15.0
S.D	0.415	0.218	44.0	53.8	15.1	48.7	0.679	21.3	0.253	2393.4	2.6	2.7	1.6	0.5
S.E.	0.104	0.055	11.4	13.4	3.8	12.2	0.170	5.3	0.063	598.4	0.7	0.7	0.4	0.1

EXPERIMENT H GROUP 6

ID#	T.P.	GLOB	GLU	T.L.	CHOL	TRIG	WT/DAY	FNL WT	RBC	WBC	POLY	LYMS	HCT	HGB
681	5.580	2.030	189.0	457.0	58.1	82.4	6.700	368.0	6.690	2750.0	7.0	91.0	45.0	15.0
682	5.810	2.160	248.0	389.0	57.7	139.0	6.800	390.0	6.270	6070.0	8.0	90.0	43.0	14.6
683	5.590	2.010	198.0	375.0	59.3	139.0	6.600	384.0	0.000	0.0	0.0	0.0	0.0	0.0
684	5.390	1.820	168.0	312.0	79.0	118.0	6.600	378.0	6.309	6710.0	8.0	90.0	43.0	14.2
685	7.080	2.933	226.0	339.0	46.6	48.9	7.300	397.0	6.660	4450.0	6.0	93.0	46.0	14.2
686	5.950	2.320	178.0	321.0	67.9	99.9	6.800	373.0	6.520	5560.0	4.0	96.0	45.0	15.0
687	5.670	2.170	219.0	493.0	82.4	103.0	6.600	371.0	6.990	2840.0	17.0	82.0	46.0	14.8
688	6.190	2.280	195.0	356.0	74.6	118.0	7.400	403.0	6.910	5[illegible]	10.0	88.0	48.0	15.4
689	6.210	2.430	208.0	235.0	47.5	76.8	8.800	451.0	6.780	5250.0	6.0	94.0	48.0	15.6
690	5.460	1.970	232.0	443.0	73.9	54.8	5.100	343.0	6.830	10130.0	9.0	86.0	47.0	15.5
691	5.610	2.830	167.0	330.0	75.6	81.7	8.100	429.0	6.520	5200.0	8.0	92.0	45.0	15.0
692	5.499	2.190	146.0	362.0	71.0	48.4	7.200	388.0	6.539	8660.0	12.0	87.0	47.0	15.4
693	5.410	2.870	241.0	389.0	44.1	62.3	7.400	397.0	6.120	6088.0	15.0	83.0	44.0	14.4
694	5.240	1.900	162.0	398.0	55.4	43.9	8.000	393.0	6.350	3360.0	12.0	85.6	45.0	14.6
695	5.860	3.220	217.0	283.0	34.4	46.2	6.400	374.0	6.510	4290.0	9.0	91.3	45.0	14.6
696	7.350	3.090	220.0	357.0	80.1	32.8	7.500	409.0	7.359	7528.0	10.0	89.0	49.0	16.2
Q-1	5.475	2.020	172.5	325.5	48.8	47.3	6.600	373.5	6.350	4290.0	7.0	86.0	45.0	14.6
MED	5.640	2.165	203.0	360.0	63.6	79.3	7.000	389.0	6.530	5566.0	9.0	90.0	45.0	15.0
Q-3	5.980	2.300	223.0	393.5	75.1	106.5	7.450	400.3	6.830	6710.0	12.0	92.0	47.0	15.4
N	16.000	16.000	16.0	16.0	16.0	16.0	16.000	16.0	15.000	15.0	15.0	15.0	15.0	15.0
AVG	5.856	2.226	199.8	360.1	62.5	79.9	7.081	390.5	6.622	5636.7	9.4	89.1	45.7	15.0
S.D.	0.589	0.345	30.8	74.3	15.8	35.0	0.843	25.4	0.318	2858.8	3.5	4.0	1.8	0.6
S.E.	0.147	0.086	7.7	18.6	3.7	8.8	0.211	6.3	0.082	531.6	0.9	1.0	0.5	0.1